(1)

Supreme Court, U.S.
FILED

001129 JAN 11 2001

OFFICE OF THE CLERK

No. _____

In the Supreme Court of the United States

DAVID ODDI; ERIN ODDI, His Wife,
Petitioner,

v.

FORD MOTOR COMPANY, et al.
Respondents.

ON PETITION FOR WRIT OF CERTIORARI
TO THE UNITED STATES COURT OF APPEALS
FOR THE THIRD CIRCUIT

PETITION FOR WRIT OF CERTIORARI

PAUL A. TERSHEL
Counsel of Record
TERSHEL & ASSOCIATES
HELENA PROFESSIONAL BUILDING
55 SOUTH MAIN STREET
WASHINGTON, PA 15301-6809
(724) 228-4700

Counsel for Petitioner

BECKER GALLAGHER LEGAL PUBLISHING, INC.,
CINCINNATI, OHIO 800-890-5001

186 SP
+ t/o

QUESTION PRESENTED FOR REVIEW

Whether a well-qualified Plaintiff's Engineering Expert in a Products Liability Case must conduct testing of the subject vehicle in order to satisfy his burden at the summary judgment stage when Plaintiff's Expert stated that the subject vehicle was defectively designed because, under foreseeable accident circumstances, the vehicle had a propensity to climb over guardrails it may strike instead of being deflected back into the roadway as a safe vehicle would be?

PARTIES TO THE PROCEEDING

Petitioner

David Oddi is a private individual and has no corporate affiliations.

Respondents

Ford Motor Company and Grumman Allied Industries, Inc., Grumman Olson Bodies, Inc., and Olsen Bodies, Inc.

TABLE OF CONTENTS

Question Presented for Review i

Parties to the Proceeding ii

Table of Contents iii

Table of Authorities vi

Petition for a Writ of Certiorari 1

Opinions Below 1

Jurisdiction 1

Federal Rule Involved 2

Statement of the Case 2

Argument for Granting the Writ 6

Conclusion 13

APPENDIX

Appendix A
Court of Appeals Opinion and Judgment,
10/13/00 . . . . . 1a

Appendix B
District Court Supplemental Memorandum
on Reconsideration, 9/16/99 . . . . . 55a

Appendix C
District Court Memorandum Order, 9/1/99 . . . . . 68a

Appendix D
District Court Memorandum Order, 3/31/99 . . . . . 85a

Appendix E
Plaintiff's Response to Motion for Reconsideration, Exhibit A 111a

Appendix F
Affidavit of John N. Noettl, 9/23/98 . . . . . 116a

Appendix G
Deposition of Geoffrey J. Germane, Ph.D., 9/26/97 . . . . . 120a

Appendix H
Deposition of Dennis Guenther, Ph.D, 9/18/97 . . . . . 125a

Appendix I
Deposition of John N. Noettl, 8/20/97 . . . . . 133a

Appendix J
Deposition of Donald Edelen, 3/5/97 . . . . . 142a

Appendix K
Deposition of David White, 2/18/97 . . . . . 147a

Appendix L
Expert Report of John Noettl, Vehicle Support Systems, Inc., 12/4/97 . . . . . 151a

Appendix M
Expert Report of John Noettl, Vehicle Support Systems, Inc., 6/16/97 . . . . . 153a

Appendix N
John Noettl's Curriculum Vitae, Vehicle Support Systems, Inc. 156a

Appendix O
Expert Report of Leon Kazarian, 6/18/97 . . . 161a

Appendix P
Curriculum Vitae of Leon Kazarian 166a

TABLE OF AUTHORITIES

Cases

Dambacher v. Mallis,
336 Pa. Super 22, 485 A.2d 408 (1984) 12

Daubert v. Merrell Dow Pharmaceuticals, Inc.,
509 U.S. 579 (1993). 6, 7, 8, 11

In re Paoli Railroad Yard PCB Litigation,
35 F.3d 717 (3rd Cir. 1994), U.S. Cert. dn.
in 513 U.S. 1190, 115 S. Ct. 1253 (1995) 6, 7

Kannankeril v. Terminix Intern., Inc.,
128 F.3d 802 (3rd Cir. 1997) 9, 10

Kumho Tire Co. v. Carmichael,
526 U.S. 137 (1999) 8

Kupetz v. Deere & Co., Inc.,
435 Pa. Super 16, 644 A.2d 1213 (1994) Alloc. dn.
539 Pa. 693, 653 A.2d 1232 (1994) 12

Roe v. Deere,
855 F.2d 151 (3rd Cir. 1988) 12

Federal Statutes and Other Authorities

28 U.S.C. § 1254(1) 2
28 U.S.C.A. § 1332 5
Federal Rule of Evidence 702 2

PETITION FOR A WRIT OF CERTIORARI

David Oddi respectfully petitions for a writ of certiorari to review the judgment of the United States Court of Appeals for the Third Circuit in this case.

OPINIONS BELOW

The Opinion of the United States Court of Appeals for the Third Circuit is reported at __ F.3d __, No. 99-3406, 2000 WL 1517673, at *6 (3rd Cir. Oct. 13, 2000). A copy of the opinion and judgment is included in Appendix A at 1a-54a. The memorandum opinion and order of the United States District Court for the Western District of Pennsylvania is unpublished. It is reprinted in Appendix D at 85a-110a. The memorandum order of the United States District Court for the Western District of Pennsylvania in accordance with Petitioner's Motion for Reconsideration is unpublished. It is reprinted in Appendix C at 68a-84a. The supplemental memorandum on reconsideration of the United States District Court for the Western District of Pennsylvania in accordance with Petitioner's Motion for Reconsideration is unpublished. It is reprinted in Appendix B at 55a-67a.

JURISDICTION

The United States Court of Appeals for the Third Circuit issued its Opinion and Judgment on October 13, 2000 (App. A at 1a-54a).[1] This Petition for Writ of Certiorari is filed within 90 days of the Opinion and Judgment of the

---

[1] Citations to "App." are to the appendix filed with this Petition for Writ of Certiorari pursuant to Supreme Court Rule 14(i).

United States Court of Appeals for the Third Circuit. The jurisdiction of this Court is invoked pursuant to 28 U.S.C. § 1254(1).

FEDERAL RULE INVOLVED

Federal Rule of Evidence 702 provides that:

> If scientific, technical or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise.

Fed. R. Evid. 702.

STATEMENT OF THE CASE

Accident Facts

On June 21, 1993, Petitioner, David Oddi, 28 years old, was catastrophically injured in a one vehicle accident. The accident occurred when his delivery truck, designed and manufactured by Defendants, Ford Motor Company (hereinafter "Ford") and Olsen Bodies, Inc., (n/k/a Grumman Allied Industries, Inc., hereinafter "GAI"), struck a guardrail while exiting a ramp off Route 79 near Pittsburgh. App. M at 153a.

Truck Climbed Guardrail

After striking the guardrail, **the vehicle climbed onto the top of the guardrail** and was led directly into a concrete

bridge abutment. Because the left front wheel of the truck was hooked over the rail, Mr. Oddi could not steer back onto the roadway and away from danger. Id. at 153a-154a.

No Guardrail Failure

It is uncontested that the guardrail did not fail and that Mr. Oddi was traveling at normal highway speed. As a result of the impact with the bridge, both of David's legs were crushed and later amputated. App. O at 165a.

Defect Claimed

Mr. Oddi filed suit against Defendants, Ford and GAI, on theories of Strict Product Liability, Negligence and Breach of Warranty. Mr. Oddi asserted that the truck he was operating was defectively designed by the Defendants because **it should not have climbed onto the guardrail in this very foreseeable accident scenario.**

Petitioner's Well-Qualified Expert Testimony

In support of his claims of defect, Mr. Oddi offered the expert liability testimony of John Noettl, an engineer. Mr. Noettl, has extensive education and experience in automobile design and crash testing. App. N at 156a-160a. The district court and the **Third Circuit acknowledged that Mr. Noettl was well qualified to render an opinion in this case.** The Defendants did not even challenge his qualifications.

Mr. Noettl testified that due to the truck's weight, height and design, **the truck had a propensity to ramp up onto guardrails** in a collision of this type. App. L at 151a-

152a. This propensity to ramp onto guardrails rendered this vehicle defective. Id.

Additionally, Mr. Oddi offered the expert testimony of Leon Kazarian, a bio-mechanist. Mr. Kazarian related Mr. Oddi's injuries to the impact with the bridge abutment. App. O at 161a-165a and App. P at 166a. **This collision would not have occurred if the truck did not climb the guardrails.** App. M at 155a.

Foreseeable Accident Circumstances

Guardrail encounters of this type are foreseeable. Thus, there was **nothing unusual about the manner of this truck striking this guardrail.** App. E at 111a-115a and App. F at 117a. It is the responsibility of vehicle manufacturers to design the guardrails to be compatible with common highway designs and foreseeable highway encounters. Id.

Truck Design Defeats Purpose of Guardrail

Accordingly, Defendants had the duty to design this truck so that it did not ramp onto guardrails in a foreseeable accident scenario. The design of this truck defeats the guardrail's purpose of deflecting the vehicle back onto the highway and out of danger.

Mr. Noettl, after examining an exemplar vehicle, examining Mr. Oddi's delivery truck and reviewing other documents, determined that the front bumper of the truck was the point where this design failed. App. M at 155a. He stated that the bumper gave way upon impact, totally exposing the wheels, and causing the truck to ramp. Id.

If Proper Design, No Injury

In addition, once the vehicle ramped the guardrail the **occupant compartment was exposed.** The floor board of the compartment was **not designed to withstand intrusion** at impact. Mr. Noettl concluded that the failure to design the occupant compartment to adequately protect the driver was a defect in the truck's design. Id. Therefore, due to the defects in the truck design Mr. Oddi's legs were crushed and later amputated.

Mr. Noettl, after reviewing the accident scene, an exemplar vehicle and Mr. Oddi's delivery truck, testified that **had the truck been designed properly, it would not have mounted the guardrail and would not have struck the bridge.** App. M at 155a. Further, a properly designed occupant compartment would not have permitted intrusion into the driver's area. Id. Accordingly, Mr. Oddi would not have been injured. App. F at 118a, App. L at 152a, App. M at 155a, and App. O at 165a.

Basis for Federal Jurisdiction in District Court

The United States District Court for the Western District of Pennsylvania (hereinafter "district court") had jurisdiction over the original action pursuant to 28 U.S.C.A. § 1332, diversity of citizenship and damages in excess of $75,000.00. Respondents filed a Motion for Summary Judgment pursuant to Federal Rule of Civil Procedure 56(c). The district court granted Respondents' motion and issued an order on March 31, 1999. App. D at 85a-110a. Petitioner filed a timely Motion for Reconsideration of Summary Judgment pursuant to Federal Rule of Civil Procedure 59(e), which was denied by the district court on September 1, 1999. App. C at 68a-84a. Additionally, the district court issued a

Supplemental Memorandum on Reconsideration dated September 16, 1999 in accordance with the Memorandum and Order issued on September 1, 1999. App. B at 55a-67a.

Petitioner filed a timely appeal with the United States Court of Appeals for the Third Circuit (hereinafter "Third Circuit"). On October 13, 2000, the Third Circuit affirmed the district court's order. App. A at 1a-54a. The Third Circuit held that Mr. Noettl's expert testimony was properly excluded under Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579 (1993). Id.

ARGUMENT FOR GRANTING THE WRIT

The Federal Rules of Evidence display a preference for admissibility. In re Paoli Railroad Yard PCB Litigation, 35 F.3d 717, 741 (3rd Cir. 1994), U.S. Cert. dn. in 513 U.S. 1190, 115 S. Ct. 1253 (1995). In this regard, the Supreme Court in Daubert did not intend to create a standard that would be a barrier to the admission of expert testimony. Rather, the Court intended to create a standard consistent with the liberal and flexible thrust of the Federal Rules of Evidence. Id.

The district court below abused its discretion in excluding Plaintiff's well qualified and reliably based expert testimony that a vehicle should not climb over a guardrail under foreseeable accident circumstances. Likewise, the Third Circuit, in affirming the district court, misapplied Daubert by applying a rigid standard to Mr. Noettl's expert testimony rather than applying a flexible standard.

ARGUMENT

A well qualified engineering expert does not have to conduct testing in a products liability case, where the accident circumstances are foreseeable, to have his expert testimony admissible under Daubert

Intent of Daubert

The intent of Daubert was not to exclude testimony of any expert recognized as qualified by both the Court and adverse parties. The intent of Daubert was to avoid "trash" or "junk" science from being considered by juries and to insure that expert testimony is reliable and relevant. Daubert, 509 U.S. at 589. A plaintiff need not prove to the Judge that the assessments of their experts are correct, but only that by a preponderance of the evidence that the expert's opinions are reliable. Paoli II, 35 F.3d at 744.

The issues presented in this case are not novel issues of science. Mr. Noettl testified that he based opinions upon his experience, continuous research, **review of technical literature with regard to automobile design,** and structural and crash testing. App. I at 133a-135a. In addition, **Mr. Noettl reviewed crash testing of other vehicles, examined an exemplar vehicle and examined the vehicle involved in the accident** in rendering his opinion in this matter. App. I at 135a-138a and App. M at 155a. Mr. Noettl testified that his suggestive alternative designs came directly from basic engineering principles and textbooks. App. I at 139a-141a. Specific citations were provided in Plaintiff's "offer of proof." App. E at 114a-115a.

Daubert Analysis = Case-By-Case Basis

The Supreme Court has ruled that a Daubert analysis must be tailored to the nature of the claims and the expert offered. Kumho Tire Co. v. Carmichael, 526 U.S. 137, 150 (1999). In Kumho, the Supreme Court recognized that in some cases, Daubert factors may or may not be pertinent, depending on the nature of the issues, the expert's particular expertise and the subject of his testimony. Id. The emphasis on the word "may" reflects Daubert's description of the Rule 702 inquiry as a "flexible one." Id.

Mr. Noettl's Testimony

According to Mr. Noettl, the **accident** facts of this case were **very foreseeable.** The truck was travelling at normal highway speed. Trucks of this type are common on highways. Impacts between vehicles and guardrails are foreseeable, particularly to vehicle manufacturers. The manner that the truck struck the guardrail was entirely foreseeable. There was no unusual terrain or other circumstances that may have vaulted the truck onto the guardrail. The guardrail did not fail, but performed as it should have. The **truck's design alone caused it to climb the guardrail.** App. E at 111a-115a, App. F at 116a-119a, App. I at 138a-139a, App. L at 151a-152a, and App. M at 153a-155a.

A vehicle should not climb a guardrail and cause the devastating injuries that Mr. Oddi suffered. Id. Mr. Noettl has testified that a vehicle that does is defective. Id. **A properly designed vehicle would have been deflected away from danger and back onto the roadway.** Id.

Defendants' Experts Concede Testing Not Necessary for Opinion

In holding that the district court properly excluded Mr. Noettl's testimony, the Third Circuit placed great emphasis on the fact that Mr. Noettl did not test his proposed alternative designs.

In this case, even the Defendant-Manufacturers did not test their design. App. J at 142a-146a and App. K at 147a-150a. Defendants' experts conceded that testing is not required to render an opinion on whether this truck is defective. App. G at 120a-124a and App. H at 125a-132a. **Defendants' experts did no testing and relied on their experience to render opinions in this case.** App. G at 120a-124a, App. H at 125a-132a, App. J at 142a-146a, and App. K at 147a-150a.

Nevertheless, Defendants and the Third Circuit criticized Mr. Noettl for not having conducted tests specific to this case. This does not make his testimony inadmissible. In fact, **testing is not a critical factor in providing an expert opinion.** Kannankeril v. Terminix Intern., Inc., 128 F.3d 802, 807 (3rd Cir. 1997).

Kannankeril Analogous to the Case at Bar

In Kannankeril, the Third Circuit held that plaintiffs' expert testimony as to the cause of plaintiff's illness was admissible. Id. at 810. The Third Circuit's holding was reached even though plaintiffs' medical expert did not perform any diagnostic medical tests . Id. Plaintiffs' **expert based his testimony "on his general experience and readings, general medical knowledge, standard textbooks, and standard references."** Id. at 806. In addition,

plaintiffs' expert relied on summary reports relevant to the issue before the court, a report of an examination by a neuropsychologist and plaintiff's own account of her symptoms. Id.

The instant case is analogous to Kannankeril in that, Plaintiff's engineering expert, John Noettl did not crash test a vehicle specifically for this case as in Kannankeril where plaintiffs' expert did not conduct any diagnostic testing of plaintiff. **Experts in both cases relied upon reports, training and years of experience in formulating their respective expert opinions.**

Mr. Noettl's Testimony is Reliable

Mr. Noettl's expert testimony regarding the defective design of Mr. Oddi's truck was arrived at by: (1) visiting the accident scene; (2) examining an exemplar vehicle; (3) examining the vehicle involved in the accident; (4) reviewing videos and photographs of the accident scene taking shortly after the accident; (5) reviewing depositions of witnesses to the accident, Petitioner and a defense expert; (6) reviewing the Pennsylvania Police Accident Report; (7) reviewing technical literature; (8) reviewing engineering design textbooks; (9) his training; and (10) his twenty-five years of experience. App. E at 111a-115a, App. I at 133a-135a, App. L at 151a-152a, App. M at 153a-155a, and App. N at 156a-160a.

While Mr. Noettl did not crash test a vehicle specifically for this case, his expert testimony was not arrived at by "a haphazard, intuitive inquiry." App. A at 43a. **The extensive amount of information that Mr. Noettl reviewed, his examination of an exemplar vehicle, and his examination of the vehicle involved in the accident created**

the basis for his expert opinion and made his testimony reliable. In determining whether an expert's testimony is reliable Daubert did not set out a definitive checklist or test. Daubert, 509 U.S. at 593. Rather, Daubert instructed the courts to consider some general observations that may determine if an expert's reasoning or methodology is reliable. Id. at 592-593.

Opinion Within Expert's Scope

A qualified auto expert should be permitted to determine that a vehicle's design is defective when the vehicle fails to perform as a safe vehicle would. Here, Mr. Noettl, a qualified automobile expert, clearly stated that **a vehicle striking a guardrail under normal highway speeds should not climb over the guardrail as this truck did.**

Mr. Noettl, a well qualified and experienced auto and reconstruction expert should be permitted to testify as to these opinions based upon: (1) his investigation of the accident which included visiting the accident scene, an examination of an exemplar vehicle and an examination of the vehicle involved in the accident; (2) his training; and (3) his twenty-five years of experience. App. M at 154a-155a and App. N at 156a-160a.

The Third Circuit in affirming the district court's decision that Mr. Noettl's testimony was inadmissible was not in keeping with the standards for admission of evidence in the Federal Courts. Mr. Noettl's testimony was reliable by a preponderance of the evidence and should have been admitted even in the absence of tests specific to this case.

Petitioner Met Burden

Furthermore, had the district court not excluded Mr. Noettl's testimony, Mr. Oddi's claims would not have been dismissed. Plaintiff's experts, Mr. Noettl and Mr. Kazarian, established that:

1. This **vehicle was defective and caused Mr. Oddi's injuries.** App. F at 116a-119a, App. L at 151a-152a, App. M at 153a-155a, and App.O at 161a-165a;

2. Alternative **feasible** safer designs existed. App. F at 116a-119a; and

3. Based on the evidence and the expert testimony, a Jury could properly conclude that **had the truck been properly designed Mr. Oddi would not have lost his legs.** App. F at 116a-119a and App. O at 161a-165a; Roe v. Deere, 855 F.2d 151 (3rd Cir. 1988).

Accordingly, Mr. Oddi established *prima facie* cases under both Sections 402 of the Restatement of Torts and the Crashworthiness Doctrine under Pennsylvania Law. Dambacher v. Mallis, 336 Pa. Super 22, 485 A.2d 408 (1984); Kupetz v. Deere & Co., Inc., 435 Pa. Super 16, 644 A.2d 1213 (1994) Alloc. dn. 539 Pa. 693, 653 A.2d 1232 (1994).

CONCLUSION

For the foregoing reasons, the petition for writ of certiorari should be granted to review the Judgment and Opinion of the United States Court of Appeals for the Third Circuit.

/s/_____
Paul A. Tershel
Counsel of Record
Tershel & Associates
Helena Professional Building
55 South Main Street
Washington, PA 15301-6809

Attorneys for Petitioner

APPENDIX A

UNITED STATES COURT OF APPEALS FOR THE THIRD CIRCUIT

[Filed October 13, 2000]

No. 99-3406

DAVID ODDI; ERIN ODDI,
His Wife

v.

FORD MOTOR COMPANY;
GRUMMAN ALLIED INDUSTRIES
INC.; GRUMMAN OLSON BODIES,
INC.; OLSON BODIES, INC.

v.

COMMONWEALTH OF
PENNSYLVANIA,
DEPARTMENT OF
TRANSPORTATION,
Third Party Defendant

DAVID ODDI,
Appellant

Appeal from the United States District Court
for the Western District of Pennsylvania
Civil Action No. 95-cv-01341
District Judge: Hon. Robert J. Cindrich

Argued: May 9, 2000

Before: GREENBERG and McGEE, *Circuit Judges*,
and GARTH, *Senior Circuit Judge*

OPINION OF THE COURT

McKEE, *Circuit Judge*.

David Oddi was catastrophically injured in a one-vehicle accident when the truck he was driving struck a guardrail and a bridge abutment. Thereafter, he filed two separate product liability actions in state court. He sued Ford Motor Company, which designed and manufactured the chassis of the truck, and he brought a separate action against Grumman Allied Industries, Inc. (then known as Olson Bodies, Inc), which designed and manufactured the finished truck. Ford and Grumman removed the actions to the district court where they were consolidated.[1] Ford and Grumman eventually moved for summary judgment based upon their contention that Oddi could not establish a *prima facie* case because his proposed expert testimony failed to satisfy the

---

[1] Jurisdiction in the district court was premised upon diversity of citizenship. 28 U.S.C. § 1332. Oddi is a citizen of Pennsylvania. Ford is a Delaware corporation and Grumman is a New York corporation.

requirements of *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993). The district court agreed and granted summary judgment in favor of Ford and Grumman, and against Oddi. The district court subsequently denied Oddi's motion for reconsideration, and this appeal followed. For the reasons that follow, we will affirm.

I. FACTS AND PROCEDURAL HISTORY.

On June 21, 1993, Oddi was driving a bread truck owned and maintained by Continental Baking Company. He was proceeding northbound at exit 14 of Interstate 79 near Pittsburgh, Pennsylvania, at approximately 55 to 60 miles an hour when the truck struck a guardrail and bridge abutment. Oddi's legs were crushed so badly by the force of the accident that they both had to be amputated. Oddi's left arm was also permanently injured.

The truck was a 1976 special order Ford M-5000 Stripped Chassis that Continental had ordered through a Ford dealership for use as a bread delivery truck. When the truck left Ford's possession and control it was comprised only of basic component parts such as frame rails, axles, engine, drive train, wheels and a front bumper. Continental took delivery of the Stripped Chassis and delivered it to Grumman for the design and manufacture of the finished vehicle. Grumman designed and manufactured all necessary aspects of the vehicle pursuant to Continental's specifications. This included modifications to the occupant compartment ("cab") and floor boards. Continental had used the truck as a bread delivery truck from 1976 through 1993, and it had been

driven for hundreds of thousands of miles in that capacity before this accident occurred.[2]

The suits that Oddi filed after his accident asserted claims against Ford and Grumman under theories of strict liability, negligence, breach of warranty and failure to warn.[3] Oddi claimed Ford's defective design of the front bumper of the bread truck allowed the underside of the truck to ride up or "ramp" onto the guardrail and strike the bridge abutment.[4] He also claimed that after the truck ramped onto the guardrail, the left front wheel of the truck hooked over the rail preventing him from steering away from the bridge abutment. He alleged that defects in the cab (designed and manufactured by Grumman) had caused the flooring to bend upon impact with the bridge abutment and apply such force as to crush both his legs. He also alleged that the truck rolled over and down an adjacent embankment after it struck the bridge abutment.

---

[2] It is impossible to determine exactly how many miles it had been driven because the maintenance records are missing, and the odometer had turned over an unknown number of times.

[3] Oddi also asserted negligence claims against the Commonwealth of Pennsylvania, Department of Transportation ("PennDOT") based upon the design of the guardrails and the bridge abutment. However, the record does not disclose the status of that action.

[4] Oddi also asserted steering defects against Ford. However, after discovery, he dismissed those claims.

Ford denied any design defects and also denied that the truck ramped the guardrail. According to Ford, the truck simply struck the guardrail and rolled over it. Similarly, Grumman denied that the flooring was deficient or that it caused any injury at all.[5]

Oddi retained two experts to support his contention that his injuries were caused by defects in the manufacture and design of the truck. John N. Noettl, an engineer, was retained to testify about the defective design, and Leon Kazarian, a bio-mechanist, was retained to testify about the process by which Oddi received his injuries.

After deposing both of Oddi's experts, Ford and Grumman moved for summary judgment. Ford argued that all of Oddi's claims should be dismissed because Oddi's proposed expert testimony could not survive the threshold inquiry required under *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), and, therefore, Oddi could not establish a *prima facie* case. Grumman did not initially make a specific challenge under *Daubert*. Instead, Grumman initially argued only that Oddi's evidence was either inadmissible or failed to satisfy Oddi's burden of proof.

Oddi responded to the summary judgment motions by filing a brief in opposition, an affidavit of Noettl, and excerpts of Noettl's deposition testimony. Oddi did not

---

[5] Ford and Grumman also filed third-party complaints against PennDOT in the removed action in district court. However, they subsequently voluntarily dismissed that action. Consequently, PennDOT was no longer a party in the district court action and is not a party in this appeal.

request an evidentiary hearing or oral argument, nor did he submit anything else in response to Ford's *Daubert* challenge.

After reviewing Oddi's submissions in opposition to the summary judgment motions, Grumman filed a reply brief in which it argued that Oddi still could not meet his burden of showing that the truck was not crashworthy. Grumman also challenged Oddi's experts under *Daubert*. Oddi responded by filing a motion to strike Grumman's reply brief claiming that the district court had not granted leave to Grumman to file it. In the alternative, Oddi sought leave to submit opposing affidavits if needed.

On March 31, 1999, the district court entered a Memorandum Opinion in which it ruled that Oddi's experts did not meet *Daubert's* admissibility standards. Absent the testimony of those experts, Oddi could not establish a *prima facie* case of liability, and the district court therefore granted summary judgment in favor of Ford and Grumman.

Oddi filed a motion for reconsideration in which his major argument was that the district court should have held a hearing on the *Daubert* challenge before granting summary judgment. However, the district court disagreed and on September 2, 1999, denied his motion for reconsideration. Oddi then sent a letter to the district court enclosing a copy of our August 2, 1999 decision in *Padillas v. Stork-Gamco, Inc.*, 186 F.3d 412 (3d Cir. 1999). Oddi argued that *Padillas* required that an evidentiary hearing be held so that he could meet the defendants' *Daubert* challenges. However, the district court disagreed and issued a supplemental Memorandum Opinion in which it held that Oddi was not entitled to an evidentiary hearing.

This appeal followed.

II. THEORIES OF LIABILITY.

Although Oddi based his suits upon several different theories of liability, he only appeals the district court's grant of summary judgment on his crashworthiness and negligent failure to test claims. We will begin our inquiry by discussing each of those theories.

A. Crashworthiness.

"The term crashworthiness means the protection that a motor vehicle affords its passenger against personal injury or death as a result of a motor vehicle accident." *Kupetz v. Deere & Co., Inc.*, 644 A.2d 1213, 1218 (Pa. Super. 1994). The doctrine "imposes liability on the manufacturer not for causing the accident, but rather for failing to minimize the injuries or even increasing the severity of the injuries sustained in an accident brought about by a cause other than the alleged defect." *Habecker v. Clark Equipment Co.*, 36 F.3d 278, 283 (3d Cir. 1994) ("Habecker III"). "[T]he crashworthiness doctrine permits a plaintiff to recover for enhanced injuries, i.e., only for those injuries he can prove he would not have sustained if he had been riding in a crashworthy vehicle." *Carrasquilla v. Mazda Motor Corp.*, 963 F. Supp. 455, 458 (M. D. Pa. 1997)(citations and internal quotations omitted). "[I]f enhanced injuries cannot be shown, then no liability exists as to the manufacturer." *Id.*

Crashworthiness is a subset of products liability law.[6] Although the Pennsylvania Supreme Court has not yet adopted the crashworthiness doctrine for products liability cases,[7] we have predicted that it would do so in an appropriate case. *See Habecker v. Clark Equipment Co.*, 942 F.2d 210 (3d Cir. 1991)("Habecker II").[8] To establish a cause of action on a theory of crashworthiness, a plaintiff must show: (1) the design[9] of the product was defective; (2) an alternative, safer design that was practical existed; (3) what injuries, if any, the plaintiff would have received had the alternative design been used; and (4) the defective design

---

[6] "In a typical products liability action in Pennsylvania, a plaintiff must show; (1) the product was defective; (2) the defect existed while the product was in the control of the manufacturer; and (3) the defect was the proximate cause of the injuries." *Habecker III*, 36 F.3d at 284.

[7] Because this is a diversity case, Pennsylvania products liability law applies. *Padillas v. Stork-Gamco, Inc.*, 186 F.3d 412, 413 (3d Cir. 1999).

[8] The Pennsylvania Superior Court accepted the crashworthiness doctrine in 1994. *Kupetz v. Deere & Co., Inc.*, 644 A.2d 1213 (Pa. Super. 1994). The Pennsylvania Supreme Court has subsequently, referred to the crashworthiness doctrine, but has not yet officially adopted it. *See Schroeder v. Commonwealth of Pennsylvania, Department of Transportation*, 551 Pa. 243, 710 A.2d 23, 28 n.8 (Pa. 1998).

[9] We have noted that "[t]he theory of products liability is applied to three types of defects: design, manufacturing and marketing (warnings). The crashworthiness doctrine implicates the overtures of design defects." *Habecker III*, 36 F.3d at 283 n.6.

caused or exacerbated specific injuries.[10] *Barker v. Deere and Co.*, 60 F.3d 158, 161 n.3 (3d Cir. 1995)(citation omitted).

B. Negligent Failure to Test.

Oddi alleged that Ford and Grumman were negligent for "[f]ailing to do adequate, necessary and proper testing of the vehicle prior to the sale which would have revealed the dangerous condition of the product." Complaint, at ¶ 4r. Oddi refers to this theory of recovery as the tort of "negligent failure to test." Oddi's Br. at 26. He claims that its elements are as set forth in *1836 Callowhill Street v. Johnson Controls, Inc.*, 819 F. Supp. 460 (E. D. Pa. 1993). Oddi argues that under *1836 Callowhill Street* he can recover under this theory if he establishes that: (1) the manufacturer has a duty to test its product; (2) the manufacturer breached that duty, i. e., the manufacturer did not test; and (3) the breach or the failure to test was the proximate cause of the plaintiff's injury. Oddi's Br. at 26.

In *1836 Callowhill*, the court made several assumptions for purposes of ruling on a motion for summary judgment. The court assumed that defendant's product was defective, that the defect caused the alleged damage, and that the defendant had a duty to adequately test the defective product to discover the defect. Nevertheless, the court granted summary judgment to the defendant as to plaintiff's

---

[10] It has been suggested that the third and fourth elements of the crashworthiness doctrine are corollaries. *Huddell v. Levin*, 537 F.2d 726, 738 (3d Cir. 1976).

negligence claim. The court concluded that plaintiff did not "offer[ ] sufficient evidence of a breach of that duty [to] create a genuine dispute of fact." *Id.* at 465. Consequently, although the court stated, that "[n]egligent failure to test is cognizable as a common law negligence theory," 819 F. Supp. at 464-65, that decision cannot fairly be said to support the proposition that a manufacturer has a general duty to test a product to determine if it is defective.

Therefore, even if *1836 Callowhill* were precedential and correctly stated the law of Pennsylvania, we would still be compelled to conclude that Oddi has cited no authority that establishes the principle that a manufacturer has a general duty to test its product. We have found no authority to support Oddi's contention that Pennsylvania recognizes an independent tort for "negligent failure to test," and Oddi has offered none.

Rather, it appears that Oddi's "negligent failure to test" claim is, at bottom, nothing more than a routine products liability case based on negligence, and that the claimed negligence is the failure to test. Under Pennsylvania law, in order for an injured party to establish a cause of action against a manufacturer based upon the latter's breach of a duty, "the plaintiff must prove, not only that the product was defective and that the defect caused his[/her] injury, but in addition, [the plaintiff must prove] that in manufacturing or supplying the product the defendant failed to exercise due care." *Dambacher v. Mallis,* 336 Pa. Super. 22, 485 A.2d 408, 424 (Pa. Super. 1984). Thus, Oddi must first establish that the vehicle was defective.

Thus, whether we view Oddi's theory as crashworthiness or negligence arising from a failure to test, he must establish a defect in the design of the truck in order to recover, and he must then show that that defect caused his injuries. As noted above, he attempted to do this through the proffered expert testimony of John N. Noettl and Leon Kazarian, but the district court refused to admit their expert testimony.

III. STANDARDS FOR ADMISSIBILITY OF EXPERT TESTIMONY.

Federal Rule of Evidence 702 states:

> If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise.

The Supreme Court amplified the operation and scope of Rule 702 in *Daubert v. Merrell Dow Pharmaceuticals, Inc., supra.* There, the Court held that scientific knowledge requires

> an inference or assertion . . . derived by the scientific method. Proposed testimony must be supported by appropriate validation -- i.e., "good grounds," based on what is known. In short, the requirement that an expert's testimony pertain to "scientific knowledge" establishes a standard of evidentiary reliability.

Id. at 590. Rule 702 thus "clearly contemplates some degree of regulation of the subjects about which an expert may testify." *Id.* at 589. Consequently, the Court established a "gatekeeping role for the [trial] judge." *Id.* at 597.

> [T]he trial judge must determine at the outset, pursuant to Rule 104(a),[11] whether the expert is proposing to testify to (1) scientific knowledge that (2) will assist the trier of fact to understand or determine a fact in issue. This entails a preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue.

Id. at 592-93. The proponent must satisfy this burden "by a preponderance of proof." *Id.* at 593 n.10.

Although "[m]any factors will bear on the inquiry," the Court has set out some "general observations," *Id.* at 593, that serve as guideposts in determining if proffered expert testimony is sufficiently relevant and reliable to be admissible.[12] First, "a key question to be answered in

---

[11] Fed. R. Evid. 104(a) provides: "Preliminary questions concerning the qualification of a person to be a witness, the existence of a privilege, or the admissibility of evidence shall be determined by the court, subject to the provisions of subsection (b)[pertaining to conditional admissions].

[12] Obviously, evidence must first be relevant to be admissible. Relevant evidence is evidence that helps "the trier of fact to understand the evidence or to determine a fact in issue." *Id.*

determining whether a theory or technique is scientific knowledge that will assist the trier of fact will be whether it can be (and has been) tested." *Id.* Second, the court should consider "whether the theory or technique has been subjected to peer review and publication." *Id.* Publication, which is an element of peer review, "is not a *sine qua non* of admissibility: it does not equate with reliability." *Id.* It may, however, suggest "good science." *Id.* "The fact of publication (or lack thereof) in a peer reviewed journal will be a relevant, though not dispositive, consideration in assessing the scientific validity of a particular technique or methodology upon which an opinion is premised." *Id.* at 594. Third, "in the case of a particular scientific technique, the court ordinarily should consider the known or potential rate of error, and the existence and maintenance of standards controlling the technique's operation." *Id.* Fourth, and finally, "general acceptance" can have bearing on the inquiry. *Id.* "Widespread acceptance can be an important factor in ruling particular evidence admissible, and a known technique which has been able to attract only minimal support with the community may properly be viewed with skepticism." *Id.* However, "general acceptance" is "not a necessary precondition to the admissibility of scientific evidence." *Id.* at 597. The Court also emphasized that the "inquiry envisioned by Rule 702 is . . . a flexible one," and noted that the "focus . . . must be solely on principles and methodology, not on the conclusions they generate." *Id.* at 595.

---

at 591. This consideration of relevance has been described as one of "fit" or "helpfulness." It requires "a valid scientific connection to the pertinent inquiry as a precondition to admissibility." *Daubert*, at 591-92.

Shortly after the Supreme Court decided *Daubert*, we applied its teachings in *In re Paoli Railroad Yard PCB Litigation*, 35 F.3d 717 (3d Cir. 1994)("Paoli II"). There, we concluded that Rule 702 has two major requirements; "qualifications" and "reliability," and noted that an expert's "qualifications" are interpreted liberally. In discussing "Reliability" we listed the factors enunciated in *Daubert* but noted the continued vitality of our prior analysis in *United States v. Downing*, 753 F.2d 1224 (3d Cir. 1985). We held that a "district court should take into account all of the factors listed by either *Daubert* or *Downing* as well as any others that are relevant," *Paoli II*, at 742, in conducting an inquiry into the reliability of proposed expert testimony. The factors that are relevant under *Daubert* and *Downing* include: "(1) whether a method consists of a testable hypothesis; (2) whether the method has been subjected to peer review; (3) the known or potential rate of error; (4) the existence and maintenance of standards controlling the technique's operation; (5) whether the method is generally accepted; (6) the relationship of the technique to methods which have been established to be reliable; (7) the qualifications of the expert witness testifying based on the methodology; and (8) the non-judicial uses to which the method has been put." *Paoli II*, at 742 n. 8.

In *Paoli II*, we also stated that the expert's testimony must "fit," in that it must assist the trier of fact. *Id.* at 743. Admissibility thus depends in part upon "the proffered connection between the scientific research or test result to be presented and particular disputed factual issues in the case." *Id.* This standard is not intended to be a high one, nor is it to be applied in a manner that requires the plaintiffs "to prove their case twice -- they do not have to demonstrate to the

judge by a preponderance of the evidence that the assessments of their experts are correct, they only have to demonstrate by a preponderance of evidence that their opinions are reliable." *Id.* at 744. This is a very important distinction. The test of admissibility is not whether a particular scientific opinion has the best foundation or whether it is demonstrably correct. Rather, the test is whether the "particular opinion is based on valid reasoning and reliable methodology." *Kannankeril v. Terminix International Inc.*, 128 F.3d 802, 806 (3d Cir. 1997). "The analysis of the conclusions themselves is for the trier of fact when the expert is subjected to cross-examination." *Id.*

Nonetheless, "conclusions and methodology are not entirely distinct from one another." *General Electric Co. v. Joiner*, 522 U.S. 136, 146 (1997). A court "must examine the expert's conclusions in order to determine whether they could reliably flow from the facts known to the expert and the methodology used." *Heller v. Shaw Industries, Inc.*, 167 F.3d 146, 153 (3d Cir. 1999). "A court may conclude that there is simply too great a gap between the data and the opinion proffered." *Joiner*, at 146; *see also In re TMI Litigation*, 193 F.3d 613, 682-683 (3d Cir. 1999), *opinion amended by* 199 F.3d 158 (3d Cir.), *cert. denied sub nom. General Public Utilities Corp. v. Abrams*, ___ U.S. ___, 120 S. Ct. 2238 (2000) and *Dolan v. General Public Utilities Corp.*, 120 S. Ct. 2238 (2000).

Although *Daubert* was decided in the context of scientific knowledge (whether evidence established a connection between the defendant's drug and birth defects), Daubert has since been extended to the kind of "technical or other specialized knowledge," at issue here. *See Kumho Tire*

Co., Ltd. v. Carmichael, 526 U.S. 137, 141 (1999) ("We conclude that *Daubert's* general holding--setting forth the trial judge's general 'gatekeeping' obligation-applies not only to testimony based on 'scientific' knowledge, but also to testimony based on 'technical' and 'other specialized' knowledge."). The expert in *Kumho Tire* was an engineer and the Court there framed the issue before it as "how *Daubert* applies to the testimony of engineers and other experts who are not scientists." *Id.* at 141.

We examine the specific testimony that was excluded here against this background. "We afford a district court's application and interpretation of Rule 702 plenary review, *Paoli II* at 749, but we review the court's decision to admit or reject testimony under an abuse of discretion standard. *Joiner*, at 143. An abuse of discretion arises when the district court's decision "rests upon a clearly erroneous finding of fact, an errant conclusion of law or an improper application of law to fact." *Hanover Potato Products, Inc. v. Shalala*, 989 F.2d 123, 127 (3d Cir. 1993). An abuse of discretion can also occur "when no reasonable person would adopt the district court's view." *Id.* We will not interfere with the district court's exercise of discretion "unless there is a definite and firm conviction that the court below committed a clear error of judgment in the conclusion it reached upon a weighing of the relevant factors." *Id.*

IV. THE CHALLENGED EXPERT TESTIMONY.

A. John N. Noettl.

Noettl, the accident reconstruction/design engineer, was to testify that the truck was defectively designed.[13] Noettl's proffered testimony is contained in a preliminary report dated June 16, 1997; an amended report dated December 4,1997; an affidavit dated September 23, 1998; and two depositions.

In his preliminary report, Noettl opined that the truck Oddi was driving

> rode up on the guard rail because of the failure of the left side of the front bumper. . . . Had the bumper not significantly deformed back and inward the vehicle would have been deflected by the guard rail.
>
> It is also my opinion that the floor board allowed intrusion by the guard rail and possibly the concrete barrier into the occupant compartment in the area near the brake pedal and where the driver's feet and legs would be located. This intrusion was a direct cause of the injuries to Mr. Oddi.
>
> Had the bumper and the floor board been properly structurally designed the vehicle would not have gone over the guard rail and the occupant compartment

---

[13] Ford and Grumman do not challenge his qualifications as an expert.

> would not have been intruded by the guard rail and concrete barrier.

App. at 104-105.

After he reviewed the deposition of defense expert Donald Edelen, Noettl submitted an amended report, dated December 4, 1997. In it he stated:

> It is my opinion that [Ford] should have warned [Grumman] of the fact that the front bumper on their chassis is for decorative trim only and will not offer protection to the body and occupant in a collision. As a result of the design of the chassis and bumper, the front wheels of the vehicle become exposed in foreseeable accident situations. Ford should have specifically warned that the bumper was extremely weak due to the fact that it had no backing plate or brackets for reinforcement and because it had holes in the bumper placed immediately adjacent to the outside where the bumper mounted to the chassis.
>
> * * *
>
> Neither Ford nor Grumman conducted any testing that involved the vehicle impacting with guardrails. Neither Ford nor Grumman incorporated any design(s) into the chassis or body of the vehicle that would prevent or reduce the likelihood of the vehicle going over a guardrail in the event of an impact with a guardrail. Due to the vehicle's height, weight, and design the vehicle as a propensity to ramp up onto the

> guardrail in foreseeable collision situations.[14] . . . This design defect caused or contributed to the cause of the accident and to Mr. Oddi's injuries.

App. at 100-01.

---

[14] This sentence could be read as advancing a new theory of design defect -- a "propensity to ramp" theory - because of the height, weight and design of the truck. That is, it could be taken as a theory separate and apart from Noettl's defective front bumper and floor board theories. However, during his second deposition, Noettl clearly stated that he was not advancing any such separate theory. He testified:

> Q: Alright. "Has a propensity to ramp." When you say that, you are just telling me that this is a bigger truck. And as a bigger truck, you believe that it has more of a propensity to ramp than smaller vehicles?
>
> A: That is correct.
>
> Q: That is all there is to it?
>
> A: That is correct.
>
> Q: *And is that a defect?*
>
> A: *No. That is not in and of itself a defect. The defects are the things we discussed.* [i.e., the bumper and floor boards, discussed in a prior deposition].

Supp. App. at 144a (emphasis added).

In response to summary judgment motions, in which Ford and Grumman noted certain deficiencies in Noettl's submissions, Noettl prepared an affidavit which Oddi's counsel attached to Oddi's response to the summary judgment motions. That affidavit is dated September 23, 1998, and reads, in relevant part:

> 1. Given the basic design of this vehicle, the following is a description of alternative designs that in my opinion, would have (1) prevented the Oddi vehicle from ramping the guard rail and (2) prevented the intrusion which occurred of structural components into the occupant compartment.
>
> A. A reinforced bumper. The bumper on the subject vehicle had a measured 3.5 X 6.5 inches holes at critical stress points next to the frame rails to which the bumper is attached. The holes were designed and manufactured by the bumper manufacturer. The bumper should have been reinforced at these points by eliminating the holes and/or welding inch to inch steel reinforcement wedges between the frame rails and the upper and lower edges of the back side of the bumper.
>
> B. Steel brackets should have been welded to the . . . back side of the upper and lower edges of the back of the bumper.
>
> C. The bending and tensile properties and or metal thickness of the bumper should have been increased in addition to A or B as described above.

D. Various bumper configurations such as tubular or cylinder designs should have been manufactured and tested in addition to A, B, and C above. These bumper configurations are stronger than flat bumpers with similar metal characteristics.

E. The occupant compartment should be reinforced by increasing the bending and tensile properties and metal thickness (by .125 inch increments) in the area of the floorboard and fire wall and/or by welding or forming ribbing to the metal in this area. Safety factors of fifty or hundred percent are common in products.

2. I have observed bracket and wedge bumper reinforcements on similar vehicles. As to metal thickness -- the steering components on the subject vehicle were protected by a measured .35 inch (approximately) thick steel enclosure while the bumper on this vehicle was designed to be .208 inch thick -- a difference of approximately .142 inch.

3. Guard rails of this type are common in road way design and vehicle encounters of the type that happened with the Oddi vehicle should be expected by manufacturers.

4. The design changes I have described were capable of being incorporated into the design and manufacture of this truck in 1976 using basic engineering design and manufacturing techniques.

> 5. The design changes I have described would not interfere with the function or intended use of the truck.
>
> 6. In my opinion the above design changes would have greatly increased bumper strength and occupant compartment protection with very little total incremental vehicle manufacturing cost.
>
> 7. It is my opinion that if the design changes described above were incorporated into the manufacturing process of the Oddi vehicle it would not have ramped on to the guard rail and would not have experiences sudden deceleration from striking the bridge abutment. This would have prevented the intrusions into the occupant compartment and the significant injury which Mr. Oddi sustained.

App. at 123-24.

In one of his depositions, Noettl testified that he based the opinions contained in his June 16, 1997 preliminary report in part on a review of accident reports, photographs, witnesses' statements, Oddi's medical records, and Oddi's deposition testimony; and in part on his own [Noettl's] "experience," "academic training," and" research that [he does] almost on a continuous basis, reviewing technical literature." App. at 138-139. However, Noettl was unable to identify any particular literature that he relied upon to form any of the opinions contained in his preliminary report. *Id.* Noettl testified that he did view films of crash tests in forming his opinions, *Id.* and he insisted that the alternative designs he suggested could be found in "any machine design book." *Id.*

at 48-49. Noettl did list a number of accepted authorities and textbooks in a document Oddi's counsel refers to as an "offer of proof." *Id.* at 201.

Ford and Grumman point to specific portions of Noettl's depositions which they claim plainly demonstrate that Noettl's proffered expert testimony does not meet *Daubert* standards. Noettl opined that the front bumper was defective because it "bent back" when it struck the guardrail. He explained this was a defect because "it was designed with a large lever arm on the vehicle, out from the frame rail. It had holes in it for towing, which, in my opinion, would greatly weaken the structure, especially with that large lever arm on it which would allow it to be bent back." App. at 45. Noettl claimed that the bumper should have been designed "with either bracketry that would go from the frame rail out to the center part of that part of the bumper, or what [he referred to] as a backing wedge." *Id.* at 47. According to Noettl, the "backing wedge" "would be like a V[ ]." *Id.*

However, when Noettl was asked to elaborate upon his belief that the bumper was defectively designed because it bent backward upon striking the guardrail the following exchange occurred:

> Q: Now, have you determined what force was inflicted on the guardrail at the time of initial impact with the truck?
>
> A: No, I haven't. No.

> Q: Have you determined what force the truck inflicted on the bridge abutment and the rail on top of the bridge abutment when it made contact with that?
>
> A: No, the reason for answering both those questions, you would have a range of variables, also, but guardrails are designed to absorb energy and deflect vehicles. You would have to make an awful lot of assumptions.
>
> Q: Have you determined or measured the strength or rigidity of the guardrail?
>
> A: No.
>
> Q: You haven't ascertained how much force it could hold, is that correct?
>
> A: That's correct.

App. at 43-44. Later in the deposition, Noettl testified as follows:

> Q: Do you know how much force it took to bend that bumper to the point where it's bent?
>
> A: No, I don't.
>
> Q: Do you know how much force that bumper was capable of sustaining without bending? Have you determined that?
>
> A: I haven't determined that, right.

Id. at 46-47.

When Noettl was questioned about his proposed designs for the bumper, and design changes that would have been necessary to remedy the suggested defect, he offered several possibilities, but he conceded that he had not attempted to test or substantiate the modifications he was suggesting.

> Q: What type of metal should the wedge be constructed from?
>
> A: It could be the same as the bumper, if you wanted to, but you just turn it on end. You could have many, many choices on that.
>
> Q: What if you used a brace? What type of metal should that brace be constructed from?
>
> A: Again, you could use the same as the bumper. Again you would have a lot of choices on that. The bracketry would probably not be as strong as the wedge. Probably not. Test it and maybe you would achieve a strength that would far exceed anything you could expect.
>
> Q: What would be the tensile strength or the gauge of the metal have to be on both of those options?
>
> A: The way you go through is look up in books and you say, "Here. We got some metal here and let's try this." Certain gauge, certain strength, something that

is readily available. It's not a big thing, is what I'm trying to say. You certainly would not cut holes in it right at one of the most critical points of where you major bending force is going to occur, which is at your railing.

Q: So this would be something relatively simple to look up in a book, and you could determine from the computations in some engineering book what you should be using. What would the name of the book be?

A: Any machine design book.

Q: Is that a particular book or is that a type of a book, machine design book?

A: That's a type of book.

Q: Could you give me an authority?

A: There are machine design books that give you all types of metal gauges. If you go through the design process for any of these things on a bumper, frame rails, exactly what they do -- they don't sit down. They don't do finite element analysis. They look up in books what metal thickness, what's our yield strength, what's our tensile properties of this metal, bang, bang, bang. We're going to use this.

Q: Have you done that?

A: No. I haven't done that, no.

Q: So you don't know what the thickness would have to be, what the metal gauge, what the tensile strength --

A: Right.

Q: -- what type of material you would need to use; is that correct?

A: I told you I would use -- probably start with the same material that you have in the bumper. Take a piece of metal, turn it on its edge, put it in back of it, weld it on there for a test, see what strength you do gain out of this as far as impact, as far as bending moments and as far as shearing. You sure hope it won't shear off. You would do that. You would say, "I want it a little bit stronger." The easiest way, by far, is to thicken the metal. That's all you have to do. Get a lower gauge metal and put that on there and try it again.

Q: How thick would the metal have to have been to have not deformed in this impact?

A: I would say, in my opinion, half inch to an inch and a half range would be more than adequate to withstand the force on edge. That's the thickness, not the width.

Q: What would the width be?

A: I don't know. Three inches or so, four inches.

B. Leon Kazarian.

Kazarian, the biomechanical engineering consultant, was retained to explain how Oddi received his injuries. Kazarian authored a preliminary report, dated June 18, 1997, in which he opined: "On impact, the end of the bridge pierced and penetrated the driver's occupant compartment impaling, cutting and crushing Mr. Oddi's extremities." The report noted that Oddi "was found outside the vehicle on the grassy slope next to the bridge." App. at 113. Though Oddi had been thrown from the truck, Kazarian concluded that Oddi had "sustained his primary injuries at the time he was in the driver's seated position," and that his injuries occurred "as a result of the bridge piercing, penetrating and crushing his extremities while he was in the driver's compartment." *Id.*

The following exchange occurred during Kazarian's deposition:

> Q: Have you considered what would have happened to Mr. Oddi in the event that there was no compromise to the floor of the vehicle and he still had the same accident? Are you able to tell us what would have happened to him physically?
>
> A: No, not as I sit here.
>
> Q: It could have been worse, it could have been better?
>
> A: I don't know.

****

> Q: And you hold no opinion on whether or not the vehicle mounted the guardrail, correct?
>
> A: That's correct.
>
> Q: Given that, have you considered what injuries, if any, Mr. Oddi would have sustained if the vehicle didn't mount the guardrail or ramp the guardrail?
>
> A: No.
>
> Q: So I take it that since you haven't considered that aspect, that you hold no opinions as to what injuries, if any, Mr. Oddi would have sustained had the vehicle not mounted or ramped the guard rail.
>
> A: Yes. As I sit here, I haven't thought about that.

Grumman's Br. at 32. Therefore, although Kazarian testified about how Oddi received his injuries, he was unable to offer an opinion on the key aspect of Oddi's crashworthiness claim, i.e., whether Oddi's injuries were exacerbated by the design of the bread truck.

V. DISCUSSION.

Oddi argues that the district court erred in denying his motion for an *in limine* hearing on the *Daubert* challenge, and in granting summary judgment. We will address each argument separately.

A. Necessity for an in limine Hearing under Daubert.

Oddi bases his contention that a hearing was required upon *Kumho Tire* (decided just one week before the district court granted summary judgment here), and our holding in Padillas.[15] We decided *Padillas* one month after the district court granted summary judgment.

Oddi submits that his case had been pending for four years before the Supreme Court decided *Kumho Tire*, and that *Kumho Tire* was not decided until after each of the following occurred in his case: (1) he filed his experts' reports; (2) his experts had been deposed; (3) defendants had filed their summary judgment motions; and (4) he had filed his papers in opposition to the summary judgment motions. Oddi's Br. at 15. Moreover, he claims that from the time he started his lawsuit until *Kumho Tire* was decided, the law did not assess nonscientific expert testimony under *Daubert*. *Id.* Nonetheless, the district court expressly subjected Noettl's testimony to *Daubert* scrutiny under *Kumho Tire*. *See* 3.31.99 Dist. Ct. Op. at 3, 7.

Thus, though not clearly articulated, Oddi is arguing that *Kumho Tire* worked a substantial change in the law and that the district court blind-sided him by subjecting his experts' testimony to a *Daubert* analysis. He contends that the district court's failure to hold an evidentiary hearing "precluded [him] from ever having the opportunity to present

---

[15] Although he now makes this argument to us, he never asked the district court to conduct such a hearing.

[his] expert testimony in accordance with the *Kumho* decision." Oddi's Br. at 15.

Oddi's claim that the scope of *Daubert* was unsettled until *Kumho Tire* is not without force. *See In re Unisys Savings Plan Litigation*, 173 F.3d 145, 162 n.2 (3d Cir. 1999) (Becker, J., dissenting). Prior to *Kumho Tire*, there was substantial uncertainty about whether *Daubert* applied to nonscientific expert testimony. *Contrast Surace v. Caterpillar, Inc.*, 111 F.3d 1039, 1055-56 (3d Cir. 1997); *United States v. Velasquez*, 64 F.3d 844, 847-50 (3d Cir. 1995); and *Habecker III*, at 289-90 (3d Cir. 1994), with *Lauria v. National Railroad Passenger Corp.*, 145 F.3d 593, 599 n.7 (3d Cir. 1998).[16] In *Lauria* we not only concluded that *Daubert* scrutiny did not apply to the proffered testimony of an engineer, but also that a nonscientific expert's testimony was admissible under Rule 702 based upon the expert's experience and knowledge. *Id.* at 599.

Nevertheless, we do not think that Oddi's reliance on *Kumho Tire* establishes that the district court erred in granting summary judgment here without an *in limine* hearing. Oddi was surely alerted to this problem when Ford raised a *Daubert* challenge in its summary judgment motion. In his brief in opposition to the defendants' summary judgment motions, Oddi specifically discussed *Daubert*, and argued that his experts' testimony satisfied *Daubert*. App. at 70-94. Despite the uncertain scope of *Daubert*, he never argued that

---

[16] In *Lauria* we specifically noted that the Circuit Courts of Appeals were split over whether *Daubert* applied to nonscientific expert testimony. *Id.* at 599 n.7.

Daubert did not apply to nonscientific expert testimony. Moreover, Oddi now reads far too much into our decision in *Padillas*.

It is not clear whether Oddi is arguing that *Padillas* always requires a hearing or that the procedural posture of his case is so like *Padillas* that the district court abused its discretion by not holding an *in limine* hearing. In *Padillas*, we focused upon the process by which the district court there determined that proffered expert testimony was inadmissible under *Daubert*. 186 F.3d at 417 ("We do not reach the question whether the district court abused its discretion in holding the [expert's] Report inadmissible under Rule 702. Our concern is with the process by which the court arrived at its ruling.").

Padillas had been injured while hosing down a chicken cutting machine manufactured by Stork-Gamco. The cutting machine had an exposed cutting blade. He sued Stork-Gamco alleging strict products liability, negligence, breach of warranty and failure to warn. To establish liability, Padillas retained an engineering expert (Lambert) who opined in a written report that Stork-Gamco's failure to provide a guard that would prevent the snagging of the hose during wash-down and its failure to protect workers from the cutting blade resulted in a defective machine that caused his injury. *Id.* at 416.

Stork-Gamco filed a motion for summary judgment, arguing that Lambert's report did not meet the *Daubert* standards for admissibility. The district court agreed, excluded the report, and then granted summary judgment to Stork-Gamco. In reversing and remanding for an *in limine*

hearing on Lambert's proffered testimony we criticized the process used by the district court. We noted at the outset that we have "long stressed the importance of *in limine* hearings under Rule 104(a) in making the reliability determination under Rule 702 and *Daubert*." *Id.* at 417 (internal quotations and citations omitted). We also reiterated the importance of an *in limine* hearing in ruling upon *Daubert* challenges even in the absence of a request for such a hearing. We stated that the district court has an "independent responsibility for the proper management of complex litigation" and emphasized that the plaintiff "needs an opportunity to be heard" on the critical issues of scientific reliability and validity. *Id.* The opportunity to be heard is important because it allows a plaintiff "a chance to have his or her expert demonstrate and explain the 'good grounds' upon which the expert evidence rests." *Id.* at 418.

However, our analysis in *Padillas* cannot be divorced from the record that was before us. In commenting upon the district court's *Daubert* analysis of Lambert's report, we noted that it "does not establish that Lambert may not have 'good grounds' for his opinions, but rather, that they are insufficiently explained and the reasons and foundations for them inadequately and perhaps confusingly explicated." *Id.* Lambert's report was quite conclusory and did not adequately explain the basis for his opinion, or the methodology employed in reaching his conclusions. It was in that context that we held that if the district court "was concerned with the factual dimensions of [Lambert's] evidence . . . it should have had an *in limine* hearing to assess the admissibility of the report giving the plaintiff an opportunity to respond to the court's concerns." *Id.* (citation and internal quotations omitted). We stated, "when the ruling on admissibility turns on factual issues, . . ., at least in the summary judgment

context, failure to hold [an *in limine*] hearing may be an abuse of discretion." *Id.* (emphasis added).

Oddi attempts to equate the district court's rejection of Noettl's testimony here with the rejection of Lambert's testimony in *Padillas*. He submits that the district court found the basis of Noettl's conclusions "confusing." Oddi's Br. at 13. Consequently, he argues, the district court should have conducted an evidentiary hearing as we ordered in *Padillas*. *Id.*

Initially, we suspect that Oddi is being disingenuous in stating that the district court found that the basis of Noettl's conclusions was "confusing." The district court's reference to "confusion" had nothing to do with its decision to exclude Noettl's testimony. Rather, the "confusion" stemmed from a statement Noettl made in his December 4, 1997 amended report. He there referred to an alleged defect based upon the height, weight and design of the truck. He said those factors created a propensity to ramp. In his motion for reconsideration, Oddi claimed that he was entitled to reconsideration because the district court "disregarded his defect claim regarding the vehicle's 'propensity to ramp' " because of the size of the vehicle. 9/2/99 Dist. Ct. Op. at 9-10. The district court's "confusion" was nothing more than a reference to the fact that neither the court nor the defendants could have interpreted Noettl's testimony about the truck's "propensity to ramp" as advancing an additional design defect apart from the defective bumper and flooring. To alleviate its "confusion," the district court reviewed Noettl's deposition testimony on that issue and quite correctly concluded that Noettl was not raising an alternative or additional design defect theory. 9/2/99 Op. at 13. *See* n.15, *supra*. Thus, the

district court did not disregard any of Noettl's theories and was not confused about the basis of Noettl's opinions.

More to the point however, Oddi's attempt to equate his circumstances with those in *Padillas* ignores the record here. As noted above, the record in *Padillas* was scant, and the district court therefore had no way of determining how Lambert had arrived at his conclusions about the chicken cutting machine. Accordingly, we held that the court had an independent obligation to reach a decision upon a record that had been adequately developed to allow for a meaningful evidentiary determination. We based that holding upon two separate considerations. "First, . . . the court has an independent responsibility for the proper management of complex litigation. Second, because plaintiff could not have known in advance the direction the district court's opinion might take and thus needed an opportunity to be heard on the critical issues before having his[/her] case dismissed." *Id.* at 417 (citations omitted).

Here, however, the evidentiary record pertaining to Oddi's expert was far from scant. As noted, it consisted of: (1) a preliminary report; (2) an amended report, prepared *after* Noettl reviewed the deposition testimony of a defense expert; (3) an affidavit specifically prepared to meet the defendants' *Daubert* challenge contained in their summary judgment motions; and (4) Noettl's two depositions. The district court therefore apparently saw no need to conduct a hearing before ruling on the *Daubert* challenges. This is consistent with *Padillas* and perfectly appropriate under *Kumho Tire*.

In *Kumho Tire* the expert's proffered testimony was taken from deposition testimony. 526 U.S. at 142 ("The plaintiffs rested their case in significant part upon deposition testimony provided by an expert in tire failure analysis, . . . , who intended to testify in support of their conclusion."). In the district court, the defendants requested an *in limine* hearing to challenge the plaintiff's expert's proffered testimony. However, the district court refused that request, finding that two depositions submitted to it (one from the case before it and one from an unrelated case involving similar issues) were sufficient to allow an inquiry under *Daubert*. *See Carmichael v. Sanyang Tires, Inc.*, 923 F. Supp. 1514, 1518 (S.C. Ala. 1996). In approving the process the district court used to conduct its *Daubert* inquiry the Court wrote:

> The trial court must have the same kind of latitude in deciding *how* to test an expert's reliability, and to decide whether or when special briefing or other proceedings are needed to investigate reliability, as it enjoys when it decides whether or not that expert's relevant testimony is reliable. Our opinion in *Joiner* makes clear that a court of appeals is to apply an abuse-of-discretion standard when it reviews a trial court's decision to admit or exclude expert testimony. That standard applies as much to the trial court's decision about *how* to determine reliability as to its ultimate conclusions.

526 U.S. at 152 (citations and internal quotations omitted)(emphasis added).

The same situation obtains here. Although Oddi strenuously claims that he was entitled to an *in limine* hearing, he does not even begin to suggest how such a hearing would have advanced his position, and we can not begin to imagine that it would have. He does not claim that he has any new or additional information to present, and he does not claim that the factual record before the district court was somehow incomplete insofar as Noettl's testimony is concerned.[17] Rather, he merely insists that he is entitled to a hearing under *Padillas*. However, "*Padillas* certainly does not establish that a District Court must provide a plaintiff with an open-ended and never-ending opportunity to meet a *Daubert* challenge until plaintiff 'gets it right.'" *In re TMI Litigation,* 199 F.3d at 159. Yet, that is where Oddi's argument would take us.

Moreover, Oddi's reliance upon a denial of an *in limine* hearing also reflects a basic misperception about the nature of the hearing the court might have conducted even if it had afforded Oddi such a hearing. In *Downing*, we reiterated that trial courts retain significant discretion to determine in each instance "the procedure [it] should follow in making preliminary determinations regarding admissibility of evidence." 753 F.2d at 1241. We said that "we will not prescribe any mandatory procedures that district courts must follow in every case involving proffers of scientific evidence," and then noted "[a] few general observations . . ." as to how the preliminary evidentiary issues might be decided under Rule 702. We stated:

---

[17] We do not suggest that the district court would have abused its discretion in denying an *in limine* hearing on this record even if Oddi had made these claims.

> It would appear that the most efficient procedure that the district court can use in making the reliability determination is an *in limine* hearing. Such a hearing need not unduly burden the trial courts; in many cases, it will be only a brief foundational hearing either before trial or at trial but out of the hearing of the jury. In the course of the in limine proceeding, the trial court may consider, inter alia, offers of proof, affidavits, stipulations, or learned treatises, in addition to testimonial or other documentary evidence (and, of course, legal argument).

Id. Here, the district court already had before it the depositions and affidavits of the plaintiff 's experts. Nothing more was required.

This conclusion is not inconsistent with our recent holding in *Elcock v. Kmart Corp.*, ___ F.3d ___, 2000 WL 1486489 (3d Cir. Oct. 10, 2000). There, we reversed an award of damages and remanded for an *in limine* hearing as to the admissibility of the testimony of plaintiff 's economic loss expert. The witness in question, Dr. Chester Copemann, testified as an expert in vocational rehabilitation, and his testimony "substantially informed the large award for loss of future earnings and earning capacity." *Id.* at *1. We reversed based upon our conclusion that "there should have been a *Daubert* hearing prior to the receipt of Copemann's testimony. . . ." *Id.* The defendant there had "repeatedly requested that the District Court conduct a *Daubert* hearing regarding Copemann's methods as a vocational rehabilitationist." *Id.* at *7. The case was litigated before the Supreme Court's holding in *Kumho Tire*, and the district court did not view the admissibility of the testimony of plaintiff's

nonscientific expert as a *Daubert* issue. *Id.* However, *Elcock*, like *Padillas*, is a situation where the "gatekeeper" could not determine what methodology the expert used, and the reliability of the expert's conclusion could therefore not be established. In *Elcock*, we stated:

> [A] review of Copemann's vocational rehabilitation testimony demonstrates the significant reliability questions raised by his methodology and compels the conclusion that a *Daubert* hearing would have permitted a fuller assessment of Copemann's analytical processes and thus was a necessary predicate for a proper determination as to the reliability of Copemann's methods.

Id. at *8. In other words, a hearing was necessary to determine how the expert reached his opinion. *Id.* at *9 ("An expert's opinion is reliable if it is based on the methods and procedures of science rather than on subjective belief or unsupported speculation; the expert must have good grounds for his or her belief.") (citations and internal quotations omitted). However, "because Copemann never explained his method in rigorous detail, it [was] nearly impossible for [the defendant's] experts to repeat Copemann's apparently subjective methods. . . " *Id.* at *11.[18] However, here, Noettl did explain how he arrived at his opinion, and he did it in as much detail as possible given the nature of his "inquiry."

---

[18] In *Elcock*, we also concluded that the trial court had erred in allowing the plaintiff 's economist to testify at trial because his testimony was not "accompanied by a sufficient factual foundation [to be] submitted to the jury." 2000 WL 1486489 at *17.

Accordingly, we reject Oddi's assertion that he was entitled to an *in limine* hearing before the court could reject his expert's testimony. Our conclusion does not, however, end our inquiry. We must still determine whether the district court abused its discretion in ruling that Oddi's proffered expert testimony was inadmissible under Rule 702 and *Daubert*.[19]

---

[19] Two small matters also remain that pertain to this portion of Oddi's argument. First, Oddi argues that the district court failed to rule on his motion to strike Grumman's reply brief filed after Oddi filed his response to the original summary judgment motions. As noted earlier, Grumman's initial summary judgment motion did not raise a *Daubert* challenge to Oddi's experts' testimony. It was only after Oddi responded to Ford's and Grumman's summary judgment motions that Grumman asserted a *Daubert* challenge via a reply brief. Oddi then filed a motion to strike, presumably asserting that the reply brief was filed without leave of court. However, the district court did not rule on Oddi's motion to strike, and Oddi claims that he was prejudiced by the district court's failure to strike Grumman's reply brief. The prejudice lies in the fact that, according to Oddi, Ford's *Daubert* challenge was only to Noettl's bumper testimony and not the flooring testimony, while Grumman's was to both the bumper and flooring. Thus, Oddi argues that he was not able to respond the newly asserted challenged to Noettl's flooring testimony. However, Oddi would be hard pressed to demonstrate prejudice because Ford's summary judgment motion mounted a *Daubert* challenge to Noettl's testimony with regard to the bumper claim as well as the flooring claim. Thus, even if it is assumed for argument's sake that the district court improperly failed to strike Grumman's reply brief, Oddi suffered no harm because Noettl's testimony as to both the bumper and the floor was attacked at the outset by Ford. Furthermore, Oddi does not cite any authority for his contention

B. The District Court's Exercise of Discretion.

Because "the evidentiary requirement of reliability is lower than the merits standard of correctness," the standard for determining scientific reliability "is not that high." *Paoli II*, at 744-45. The test is not "whether the . . . expert might have done a better job." *Kannankeril*, 128 F.3d at 809. Nonetheless, even though the Federal Rules of Evidence "embody a strong and undeniable preference for admitting any evidence which has the potential for assisting the trier of fact," *Kannankeril*, at 806, we do not believe that the district court abused its discretion in rejecting Oddi's expert testimony here.

As we noted earlier, the factors to be considered in a *Daubert* admissibility inquiry include:

---

that it was improper for Grumman to file a reply brief or any authority supporting his contention that Grumman's reply brief should have been stricken. Consequently, Oddi's prejudice argument is without merit.

Second, Oddi argues that the district court did not comply with its local court rule 7.1F which requires oral argument for dispositive motions "unless expressly precluded by the court." However, this argument is also without merit. As the district court expressly noted, it is the custom and practice of the United States District Court for the Western District of Pennsylvania to preclude oral argument on dispositive motions. The ability of the district courts to preclude argument is expressly given to the court by the local rule.

> (1) whether a method consists of a testable hypothesis; (2) whether the method has been subject to peer review; (3) the known or potential rate of error; (4) the existence and maintenance of standards controlling the technique's operation; (5) whether the method is generally accepted; (6) the relationship of the technique to methods which have been established to be reliable; (7) the qualifications of the expert witness testifying based on the methodology; and (8) the non-judicial uses to which the method has been put.

Paoli II, at 742 n. 8. While Noettl clearly meets *Daubert's* qualifications requirement, his expert opinion does not satisfy any of the other considerations that determine admissibility.

Noettl posited two hypotheses. His first hypothesis was that the front bumper's design should have included either bracketry or a brace system that would have increased the bumper's rigidity, prevented the truck from ramping, and deflected the vehicle back onto the roadway after impact with the guard rail. His second hypothesis was that thicker and/or ribbed metal on the flooring of the cab would have retained the integrity of the cab. However, Noettl quite candidly testified that he never tested either hypothesis. Consequently, he has not satisfied the first of the *Daubert* factors. The Supreme Court has explicitly instructed, "[o]rdinarily, a *key* question to be answered in determining whether a theory or technique is scientific knowledge that will assist the trier of fact will be whether it can be (and has been) tested." *Daubert*, at 593 (emphasis added).

Although *Daubert* does not require a paradigm of scientific inquiry as a condition precedent to admitting expert

testimony, it does require more than the haphazard, intuitive inquiry that Noettl engaged in. Given Noettl's responses, Oddi could not establish the existence of Noettl's methodology and research let alone the adequacy of it.[20] This is illustrated by Noettl's attempt to explain how he arrived at his conclusion. Noettl testified that he had "studied" bread trucks but was not able to state if they were the same kind of truck that Oddi was driving or even if they were produced by the same manufacturer.

> Q: What type of vehicles [did you examine]?
>
> A: Bread trucks.
>
> Q: Whose bread trucks? Who made them?
>
> A: They were in front of a grocery store and I walked up and looked at them. I didn't record anything off of them. I seen them [i.e., bracketry or wedge supports] on them [i.e., front bumpers].
>
> **********
>
> Q: You didn't make a note of what the bread truck was so you could go back and say, "Here's the design I'm proposing and somebody is already using this."

---

[20] Methodology is defined as "body of methods, rules, and postulates employed by a discipline: a particular procedure of set of procedures." WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY 747 (1990).

A: I said that in my mind, and I had groceries and I didn't have a camera and nothing else.

Q: You don't remember the name of the bread company?

A: No, I don't. It might come to me. I can't tell you, no.

****

Q: You don't know whether or not those trucks would have sustained a bending of the bumper the same as this truck because we don't know what the forces are, right?

A: I would say that they have a better chance, but I can't tell you more than that, no. That's correct.

****

Q: But, what you've seen, you don't know whether or not that would have changed the scenario in this accident one way or the other?

A: I haven't evaluated that.

App. at 53.

Moreover, not only did Noettl fail to test either hypothesis, he never even considered the design of the guardrail or the possibility that the damage to Oddi's truck

was a factor of the design of the guardrail, not the design of the truck.

> Q: What if the guardrail was deformed and bent back by the force of the impact so it was bent to the point where it was lower than the bumper? Could a ride-up occur then?
>
> A: It if was bent back further than the bumper's height.
>
> Q: If it was bent back and, therefore, it was lower than the height of the bumper, could it ride up?
>
> A: It's possible. I haven't thought of it, and how long. I would have to look at that. If you, your tire is exposed to ramping --
>
> Q: If you have the bumper and the guardrail here and the guardrail bends down to a point lower than the bumper, the tire could ride up on it, isn't that correct?
>
> A: That is a possibility, yes.

App. at 46.

Noettl also conceded that strengthening the bumper as he proposed could result in even greater injury because the increased rigidity could transmit more force to the driver of the truck than the defendants' design.

> Q: To get back to my question, would the energy-- if you had a rigid bumper, on impact, the energy of the

impact and the force of the impact would be transferred to the occupants, right?

A: Some of it would, yes.

Q: More of it would than if you had a bumper that had give to it?

A: Right.

App. at 40-14. Noettl did not offer any testimony as to the point on the continuum between absolute rigidity and the rigidity of defendants' design that would achieve greater protection than the bumper on Oddi's truck yet afford a *practical* alternative.

Noettl's explanation of the purported defect in the floor of the truck was undermined by the same laws of physics that undermined his testimony that the bumper design was defective.

Q: What was wrong with [the floor]?

A: It wasn't strong enough to prevent intrusion in this type of an accident into the occupant compartment, exposing the driver to the dangers of that intrusion.

Q: What should have been done?

A: The metal could have been made thicker. It could have been ribbed.

3/31/99 Op. at 12-3. However's Noettl's own logic clearly suggests that any such alteration may well have been less able to absorb impact itself, and therefore it may have simply transferred even more force to the occupant than the defendants' design did. Although it may well be that there is an ideal thickness that would have been able to absorb far greater force than the defendants' design yet still protect the truck's occupant, Noettl was not able to identify that point. He was asked "How thick should it have been?" He responded: "Well, the way I would do that is to thicken the metal and rib it and then do a test to see, if under these types of foreseeable accidents, it would really retain the integrity of the occupant compartment." 3/31/99 Op. at 12-13. However, he never did that. *Id.*

Not only did Noettl not test his hypotheses, he did not even attempt to calculate the force that was inflicted on the truck by the guardrail at impact; he did not calculate the force of the bridge abutment on the truck; and he did not measure the strength of the guardrail or determine how much force the guardrail could sustain. He did not know how much was required to bend the bumper or penetrate the floor, or how much force the bumper or floor could withstand. His hypothesis about adding a "wedge" or bracket to bumper was likewise without support as he did not determine the tensile strength or gauge of whatever metal should be incorporated into his alternative design. Accordingly, there was no way of knowing if his suggested alternative would better protect the cab's occupant, or if the suggested modifications were practical.

Essentially, Noettl's expert opinion that the front bumper would have sustained the impact with the guard rail

and not ramped had it been strengthened with either bracketry or wedge supports and that the flooring in the occupant compartment should have been thicker or ribbed is based on nothing more than his training and years of experience as an engineer. Although there may be some circumstances where one's training and experience will provide an adequate foundation to admit an opinion and furnish the necessary reliability to allow a jury to consider it, this is not such a case. *See e.g., Lauria*, at 599 (former Conrail foreman's many years of experience with railroad track equipment, maintenance and safety equipment, qualified him as an expert to testify about Amtrak's responsibility to inspect and maintain railroad track in a safe condition). Noettl's *ipse dixit* does not withstand *Daubert's* scrutiny. An "expert's opinion must be based on the methods and procedures of science rather than on subjective belief or unsupported speculation." *Paoli II*, at 742 (citations and internal quotations omitted).

Since Noettl conducted no tests and failed to attempt to calculate any of the forces on Oddi or the truck during this accident, he used little, if any, methodology beyond his own intuition. There is nothing here to submit to peer review, and it is impossible to ascertain any rate of error for Noettl's assumptions about the forces that caused Oddi's horrific injuries. Similarly, no standards control his analysis, and no "gatekeeper" can assess the relationship of Noettl's method to other methods known to be reliable and the non-judicial uses to which it has been put. Clearly, the district court did not abuse its discretion in excluding Noettle's proffered expert opinion testimony.

We also note an obvious gap in Oddi's argument. As recited earlier, Oddi retained two experts, Noettl and

Kazarian. The district court also found that Kazarian's expert opinion testimony did not satisfy *Daubert* . 3/31/99 Dist. Ct. Op. at 15-16. Kazarian's expert opinion went to the "enhanced injuries" element of the crashworthiness claims. Unless Oddi can establish that the defendants' design and/or manufacture enhanced injuries he would not have otherwise sustained, or caused him to sustain injuries that he would not have sustained otherwise, there can be no recovery under a theory of crashworthiness. *Carrasquilla,* 963 F. Supp. at 458. Consequently, even assuming *arguendo* that Oddi convinced us that Noettl's testimony was improperly excluded, his failure to address the admissibility of Kazarian's testimony means that Oddi has no admissible evidence to demonstrate the "enhanced injuries" elements of a crashworthiness claim.[21]

C. The District Court Properly Granted Summary Judgment on the Negligent Failure to Test Claim.

Finally, Oddi argues that the district court erred by granting summary judgment to Ford and Grumman on his negligent failure to test claim. As noted, Oddi claims that a manufacturer has an affirmative duty to test its product to see if it is defective. He then contends that "it is within the comprehension of lay jurors to understand that if the Defendants had tested this truck, they would have been aware

---

[21] Moreover, Kazarian's testimony would not have been as helpful as Oddi believes even if it had been admitted. Kazarian conceded that he had no opinion on what injuries Oddi would have suffered had there been no compromise to the floor of the occupant compartment and had no opinion on what injuries Oddi would have sustained if the truck had not ramped the guard rail.

that, in an accident, its design would defeat the purpose of a guardrail." Oddi's Br. at 27. Accordingly, Oddi argues that even if his expert testimony was properly excluded, his negligence claim still survives because he does not need expert testimony to establish that claim.

As a general principle, "[e]xpert evidence is not necessary . . . if all the primary facts can be accurately and intelligibly described to the jury, and if they, as [persons] of common understanding, are as capable of comprehending the primary facts and of drawing correct conclusions from them as are witnesses possessed of special or peculiar training of the subject under investigation." *Padillas*, at 415-16 (citation omitted); see also *Cipriani v. Sun Pipe Line Co.*, 574 A.2d 706, 710 (Pa. Super. 1990) ("However, expert testimony is not required when the matter under consideration is simple and lack of ordinary care is obvious and within the range of comprehension of the average juror.") (citations omitted). Although expert evidence is generally required in a products liability case where a defect is alleged, we have never foreclosed the possibility that a defective condition may be established through non-expert evidence. In *Padillas* we opined that since the case was at the summary judgment stage, it was "premature to rule out that testimony and pictures may enable the jury to clearly see the construction of the machine and the manner of its use, rendering expert testimony unnecessary." *Padillas*, at 416. Consequently, we held that it was entirely possible that Padillas' non-expert testimony may be "sufficient to submit his claim of defect to the jury." *Id.*

The truck Oddi was driving is not at all like the chicken cutter with exposed blades in *Padillas*. A whirling cutting blade without a proper guard is obviously dangerous.

It could reasonably be regarded by a lay juror as a design defect. In addition, in *Padillas*, plaintiff offered nonexpert testimony including, but not limited to, reports from defendant's own employees that referred to "Safety Problems," and a report from the defendant's engineering manager "addressing problems with the machine . .. including 'safety concerns [in that the blades were] not well grounded.'" 186 F.3d at 415.

We do not believe that a juror could look at the front bumper and the flooring of the cab of the truck Oddi was driving and reasonably conclude, not only that its design was defective, but also that testing would have disclosed the defect and that it could have been remedied. Such conclusions are within the peculiar competence of experts. Inasmuch as Oddi's "defect expert" does not survive *Daubert* scrutiny, the district court properly granted summary judgment to Ford and Grumman on Oddi's negligent failure to test claim.[22]

VI. CONCLUSION.

We are not unsympathetic to Oddi. He suffered horrific and catastrophic injuries while driving the truck that had been designed and/or manufactured by the defendants. That does not, of course, establish that either defendant is necessarily liable for any of those injuries or that Oddi's proffered proof was sufficient to prove liability on their part.

---

[22] Oddi claims that neither Ford nor Grumman moved for summary judgment on his negligent failure to test claim. Oddi's Br. at 27. That is incorrect. Ford's and Grumman's summary judgment motions were directed to all of Oddi's claims, including his negligence claims.

Nor does our holding suggest that every plaintiff must engage in such sophisticated and refined testing (including crash-testing) as to preclude a successful suit for damages for all but the wealthiest of plaintiffs or a group of plaintiffs sufficiently large to allow the economies and practicalities of class certification. The inquiry required under *Daubert* ought not to become an impenetrable barrier for plaintiffs with limited resources or restricted circumstances. As noted above, the Supreme Court reminds us that the "inquiry envisioned by Rule 702 is . . . a flexible one." *Daubert*, 509 U.S. at 595. It does not require the most elaborate or sophisticated tests or studies that can be imagined by opposing counsel. Nevertheless, here, the district court's inquiry established that Oddi's proffered expert testimony was not admissible under Fed. R. Evid. 702, and we conclude that the district court did not abuse its discretion in rejecting that evidence. Accordingly, we will affirm the district court.

A True Copy:
Teste:

Clerk of the United States Court of Appeals for the Third Circuit.

UNITED STATES COURT OF APPEALS
FOR THE THIRD CIRCUIT

[Filed October 13, 2000]

No. 99-3406

DAVID ODDI; ERIN ODDI,
His Wife

v.

FORD MOTOR COMPANY;
GRUMMAN ALLIED INDUSTRIES
INC.; GRUMMAN OLSON BODIES,
INC.; OLSON BODIES, INC.

v.

COMMONWEALTH OF
PENNSYLVANIA,
DEPARTMENT OF
TRANSPORTATION,
Third Party Defendant

DAVID ODDI,
Appellant

Appeal from the United States District Court
for the Western District of Pennsylvania

Court of Appeals Opinion & Judgment - 10/13/00

Civil Action No. 95-cv-01341
District Judge: Hon. Robert J. Cindrich

Argued: May 9, 2000

Before: GREENBERG and McKEE, Circuit Judges, and GARTH, Senior Circuit Judge

JUDGMENT

This cause came to be heard on the record from the United States District Court for the Western District of Pennsylvania and was argued by counsel on May 9,2000.

On consideration whereof, it is now here ORDERED and ADJUDGED by this Court that the judgment of the District Court entered on March 31, 1999, and its Order of September 1, 1999, are hereby affirmed.

ATTEST:

/s/_____
Acting Clerk

Dated: October 13, 2000

APPENDIX B

IN THE UNITED STATES DISTRICT COURT FOR THE WESTERN DISTRICT OF PENNSYLVANIA

[Filed September 16, 1999]

Civil Action No. 95-1341

DAVID ODDI,
Plaintiff,

v.

FORD MOTOR CO.,
Defendant,

v.

GRUMMAN OLSON BODIES, INC., et al.,
Third Party Defendants.

DAVID ODDI,
Plaintiff,

v.

OLSON BODIES, INC., and

GRUMMAN ALLIED)
INDUSTRIES, INC.,)
Defendants.)
)

SUPPLEMENTAL MEMORANDUM ON RECONSIDERATION

The day after the court filed the memorandum order denying plaintiff's motion for reconsideration on September 1, 1999, the court received a letter from plaintiff's counsel enclosing a copy of the Third Circuit's decision in Padillas v. Stork-Gamco, Inc., 1999 WL 558113 (3d Cir. Aug. 2, 1999). We were not aware of the Padillas decision until that time. Had we known of Padillas we would have been obligated to discuss it in our September 1, 1999 memorandum. One of the holdings of Padillas involves the procedure to be followed when an expert's opinion is challenged on summary judgment. This is one of the arguments raised in Oddi's motion for reconsideration and analyzed in the court's September 1 decision. Simply put, a recent opinion from a controlling court on a dispositive issue merits our consideration on the record. If that were not compelling enough -- and it is -- Padillas reversed a district court decision that closely resembles ours. Because of the significance of Padillas, and because our awareness of it so closely coincides with the date of our reconsideration of the entry of summary judgment against Oddi, we believe he is entitled to our position on this new authority. For these reasons, this supplemental memorandum should be considered part of our September 1, 1999 Memorandum Order on reconsideration.

Padillas involved personal injuries caused by the sharp, unguarded blades of a chicken cutting machine. The plaintiff made the typical claims for strict liability, negligence, breach of warranty, and failure to warn. The district court granted summary judgment for the defendant because of the plaintiff's expert's lack of testing or research to support his opinion about defect, and his conclusory statements in his report. The expert evidence thus did not satisfy the admissibility standards set by Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 125 L.Ed.2d 469 (1993), and Third Circuit authority. Without an expert opinion, Padillas had no evidence on an essential element of his tort claims -- defect. This of course is a defect of his own that rendered his claims subject to summary judgment under Rule 56.

We reached essentially the same decision in this case, involving personal injuries from an allegedly defective motor vehicle, as a review of our March 31, 1999 summary judgment opinion will demonstrate. Little more than that need be said about why Padillas is relevant here.

As alluded to above, Oddi argued strenuously after summary judgment was granted that the procedure the court followed for taking expert evidence in support of his claims was inadequate. One such argument was that the court should have conducted an evidentiary hearing where his expert could have testified. He asserted that this opportunity would have saved his case from summary disposition.

The court of appeals in Padillas held outright that it was an abuse of discretion for the district court not to have conducted an evidentiary hearing in deciding a summary

judgment motion. Given this holding, we must look to the court's analysis for guidance to apply here in evaluating our determination to forego an evidentiary hearing, as reaffirmed on September 1.

Before considering the Third Circuit's decision in detail, however, it is worth reviewing relevant portions of Daubert and the Supreme Court's most recent opinion on expert evidence issued eight days before our summary judgment decision, Kumho Tire Co. v. Carmichael, 119 S. Ct. 1167, 143 L. Ed.2d 238 (1999). These decisions bind all courts in their treatment of expert evidence. Daubert reveals that from the outset of the Supreme Court's establishment of the trial court's gatekeeping role in admitting expert evidence, the Court "emphasized" that "[t]he inquiry envisioned by Rule 702 is . . . a flexible one."[1] Daubert, 509 U.S. at 594, 125 L. Ed.2d at 483-84. In addition, while not directly on point, the Supreme Court expressly contemplated the application of "conventional devices" such as Rule 56 in addressing scientific evidence that was "shaky but admissible." 509 U.S. at 596, 125 L. Ed.2d at 48-85.

As we briefly observed in our September 1, 1999 memorandum order, the Kumho decision did nothing if not add to Daubert's emphasis on flexibility for trial courts in examining expert evidence. With regard to the substance of the trial court's inquiry, the Court stated In the second paragraph of Kumho:

---

[1] Flexible is defined as "characterized by a ready capability to adapt to new, different, or changing requirements." Merriam-Webster's Collegiate Dictionary 445 (10th ed. 1999).

> We also conclude that a trial court may consider one or more of the more specific factors that Daubert mentioned when doing so will help determine that testimony's reliability. But, as the Court stated in Daubert, the test of reliability is "flexible," and Daubert's list of specific factors neither necessarily nor exclusively applies to all experts or in every case. Rather, the law grants a district court the same broad latitude when it decides how to determine reliability as it enjoys in respect to its ultimate reliability determination.

143 L. Ed.2d at 246 (emphasis in original). The Court went on to add:

> Daubert makes clear that the factors it mentions do not constitute a definitive checklist or test. . . . we can neither rule out, nor rule in, for all cases and for all time the applicability of the factors mentioned in Daubert, nor can we now do so for subsets of cases categorized by category of expert or by kind of evidence. Too much depends upon the particular circumstances of the particular case at issue.
>
> Daubert itself is not to the contrary. It made clear that its list of factors was meant to be helpful, not definitive.

143 L. Ed.2d at 251-52 (emphasis in original). In this vein the Court stated further, "whether Daubert's specific factors are, or are not, reasonable measures of reliability in a particular

case is a matter that the law grants the trial judge broad latitude to determine." Id. at 253.

Importantly for our purposes, the Court extended this flexibility from the substance of the Rule 702 reliability test to the procedure.

> The trial court must have the same kind of latitude in deciding how to test an expert's reliability, and to decide whether or when special briefing or other proceedings are needed to investigate reliability, as it enjoys when it decides whether that expert's relevant testimony is reliable.

Id. at 252-53 (emphasis in original).

We add that our use of these citations should not be taken as an attempt to diminish in the least the obvious utility of the factors for testing expert reliability already identified by the Supreme Court and the Third Circuit. Rather, it is to highlight the noteworthy level of discretion that the Supreme Court envisions in the hands of the trial court when applying these factors, in both substance and process.

Padillas cited Daubert and its reference to a flexible form of inquiry under Rule 702, 1999 WL 558113 at *4, but took the idea no further. Padillas did not cite the passages above from Kumho or the ideas contained therein.

Though acknowledging the flexible inquiry mentioned in Daubert, the court of appeals in Padillas promptly observed that it had "long stressed the importance of in limine hearings

under Rule 104(a) in making the reliability determination required under Rule 702 and Daubert." Id. at *4. Three of the court's four case citations on this point, however, pre-date even Daubert; the fourth was decided in 1994, but only refers to the general need for adequate process. Id., at *4-*5. Thus, while there is something to be said for the court's invocation of consistency, such a finding may be behind the current state of the law, at least as we read it.

In any event, the court's citations establish that a party seeking to admit expert evidence must be given an adequate opportunity to do so. The court of appeals then finds that in limine hearings can be an important part of the admissibility process. As general principles, few would contest these points. The significant question here, however, is when we should conduct in limine hearings on expert evidence. Failing an answer to that general question, a more focused question that arose in Padillas and this case is whether we must always conduct them as part of a summary judgment decision, which already involves an open-ended opportunity for the non-moving party to submit evidence. The authority used by the court of appeals does not reach this specific question, although the court cites a First Circuit opinion that counsels caution in applying Daubert on summary judgment. Cortes-Irizarry v. Corporacion Insular de Seguros, 111 F.3d 184, 188 (1st Cir. 1997). Padillas itself is the authority, in its rationale and its holding, that we should conduct in limine hearings in deciding summary judgment motions.

A question closely related to when we should conduct in limine hearings is why we should conduct them, again, with emphasis on the need for such hearings on summary judgment. One conclusion the panel in Padillas reached is that

a hearing is necessary "because plaintiff could not have known in advance the direction the district court's opinion might take and thus needed an opportunity to be heard on the critical issues before having his case dismissed." Padillas at *5. The court of appeals makes a similar observation in the next paragraph, stating that

> if the court was concerned with the factual dimensions of the expert evidence, as we said in Petruzzi's IGA Supermarkets, Inc. v. Darling-Delaware Co., 998 F.2d 1224, 1240 (3d Cir. 1993), "it should have held an in limine hearing to assess the admissibility of the [report]," giving plaintiff an opportunity to respond to the court's concerns and cure the deficiencies of the report if it could.

Id.

In the first place, taking the court of appeals' first point, it is not so that "plaintiff could not have known in advance the direction the district court's opinion might take." On summary judgment, plaintiffs have a reliable source to learn which direction the court's opinion might take, in the form of defendants' Rule 56 briefs. That is where the court looks to decide what to say in its summary judgment opinions. When the defendant has specifically pointed out the potentially fatal flaws in the plaintiff's case, it does not seem an unfair burden to expect the party facing summary

disposition of his claims to identify these alleged flaws without the court's assistance.[2]

Apart from this issue, however, these comments taken together suggest a role for the trial court that is not altogether consistent with its status as a neutral decisionmaker. Certainly there are some interactions between lawyers and judges during the course of a case in which a judge, by his or her questions or comments, generally relates a position on the merits of some evidence or claim. And certainly this process is most apparent at trial, where all the participants are present, rulings are made on the spot, and there is regular give-and-take among those in the courtroom. But apart from what should be general, spontaneous statements from the judge, it seems entirely appropriate in our form of judiciary that a party does not know the direction of the court's decision before it is made, regardless of the consequences to his case. Similarly, a court's "concerns" with a party's evidence would appear to have no place in a case; even less so the suggestion that the trial court should signal its "concerns" to the challenged party, then give that party "an opportunity to respond to the court's concerns and cure the deficiencies of the report if it could." Padillas at *5.

---

[2] If the non-moving party is faced with many arguments on summary judgment, and is confused about which ones to focus on, a reliable indicator of which one a court might use to decide the question is the simplest issue that disposes of the entire case, or the largest portion of the case. This practice should be apparent from reading district court opinions. An allegedly fatally flawed expert opinion, which may deprive a plaintiff of an essential element of his claim, would seem to fall into this category.

We can envision a variety of problems arising from this procedure. How is the court to convey its concerns about the expert's deficiencies? What is the adverse party doing while the court is expressing its concerns and his opponent is responding? What are the boundaries of the opportunity to cure problems in the expert report? What if the cure is that a new expert is needed, because the current expert has good grounds for his opinion, but is simply too confusing? What becomes of Rule 26, and the pretrial schedule, when the cures for the expert's deficiencies result in the appearance of information that has never before been disclosed to the opposing side? Would fairness dictate that we reopen discovery and reschedule the filing of new pretrial statements with new expert reports for both sides?

Were we to follow this process, would plaintiffs whose cases are subject to other sorts of dispositive evidentiary questions be justified in seeking the same treatment? Rule 56 requires that affidavits be made on personal knowledge. If a plaintiff's case is subject to summary judgment because his affidavit opposing summary judgment is filled with inadmissible hearsay and therefore fatally defective, but which could easily be cured on notice, should he be given a hearing and made aware of the court's "concerns" so that his case too is saved from summary disposition?

In considering the Rule 56 process, we have more difficulty finding its flaws for Daubert purposes than the court of appeals. Through a summary judgment motion, a party specifically points out the shortcomings in his opponent's expert's opinion -- in this case, using the Daubert and Third Circuit factors. One might expect that the openings for such arguments would be limited by the requirements of Rule 26,

which control the contents of the expert's report, and which the expert is bound to follow. If the non-moving party nonetheless considers his expert vulnerable, he has the unfettered opportunity to file affidavits, deposition excerpts, and other materials to counter these challenges.

In one sense, this procedure seems more accommodating to the expert than an in limine hearing, in the same way that interrogatories are easier to respond to than questions at a deposition. On summary judgment, the witness sees a limited number of his faults pointed out in an unchanging way. He in turn can respond to these claimed shortcomings in whatever detail he desires, including submission of particularized affidavits. At a hearing, cross-examination opens the potential for more and faster-paced challenges with less time to reflect on answers. The impression of reliability an expert can leave at a hearing is much less controlled. Thus, summary judgment should not be a significant obstacle for experts whose opinions are even minimally prepared with an eye toward governing rules and case law.

In sum, we searched Padillas, as we should, for principles that extend to this case. We have sought not to read too much into Padillas in analyzing its effect on our decision. While avoiding a hard rule, the Third Circuit nonetheless displays an unmistakable preference for evidentiary hearings when experts are challenged on summary judgment. After all, that was the court's holding after a thorough discussion of its history of accommodation toward in limine hearings and recognition of their virtues.

There are four features of Padillas that we believe limit its applicability to the case decided. First, the Third Circuit does not seem to genuinely recognize the flexibility in choosing the procedure for testing expert opinion that trial courts were afforded by the Supreme Court in Kumho and, to a lesser extent, in Daubert. It is inevitable that more settled procedures will eventually emerge from appellate case law. But we do not believe such procedures can properly be fixed to a single option under the current state of the law, even when invoked on summary judgment, as Padillas seems to do.

Second, the authority on which the court of appeals relies to justify its stress on the importance of evidentiary hearings on expert opinions, by the terms of its own citations, says little more than that a party should have an adequate opportunity to respond to challenges to its expert evidence. That is not disputed. That summary judgment procedures in particular are inadequate to examine expert opinion is a point that the Padillas opinion reaches on its own in a post-Daubert and Kumho legal landscape. With no case acknowledging the relevant portions of Supreme Court precedent on the subject, however, there is room to question the application of the Third Circuit's opinion here.

Third, the procedure the court of appeals suggests to reach the appropriate level of adequacy for a party to defend his expert's opinion seems to overstep the bounds of our neutrality, as well as create other significant problems of case administration.

Last, and most importantly, we believe this case is distinguishable from Padillas, which, by its holding, was narrowly limited to the circumstances presented there. As a

predicate to its holding, the court of appeals stated that "when the ruling on admissibility turns on factual issues, as it does here, at least in the summary judgment context, failure to hold such a hearing may be an abuse of discretion." Padillas at *6. We do not perceive our ruling on inadmissibility and consequently, our grant of summary judgment, to have been based on factual issues. Rather, there was no dispute about the facts recited by Oddi's expert or used by him as the bases for his opinions; we merely held that assuming all that he said as true, the particular standards of Daubert and its construction by the Third Circuit simply were not met.

Accordingly, we will not alter our treatment of Oddi's claims based on Padillas. In this particular case, Rule 56 provided all the process necessary and fair for him to avoid summary judgment, without the need for an evidentiary hearing.

Date: September 16, 1999

/s/_____
ROBERT J. CINDRICH
United States District Judge

APPENDIX C

IN THE UNITED STATES DISTRICT COURT FOR THE WESTERN DISTRICT OF PENNSYLVANIA

[Filed September 1, 1999]

Civil Action No. 95-1341

DAVID ODDI,
Plaintiff,

v.

FORD MOTOR CO.,
Defendant,

v.

GRUMMAN OLSON BODIES, INC., et al.,
Third Party Defendants.

DAVID ODDI,
Plaintiff,

v.

OLSON BODIES, INC., and

GRUMMAN ALLIED)
INDUSTRIES, INC.,)
Defendants.)
_____)

MEMORANDUM ORDER

This is an action for personal injuries sustained by David Oddi during the course of his employment while driving his delivery truck for a bakery. Oddi sued the manufacturers of the truck chassis, Ford Motor Company, and the truck body, now known as Grumman Olson Bodies, Inc., under theories of strict liability, negligence, breach of warranty, and belatedly, failure to warn. These defendants moved for summary judgment on grounds, among others, of the inadmissibility of plaintiff's liability expert's opinions. We granted the motions and dismissed the action on March 31, 1999. Doc. No. 94. Now pending is plaintiff's motion for reconsideration. Defendants have duly opposed the motion.

The United States District Court for the Eastern District of Pennsylvania has written helpfully on the standard for deciding a motion for reconsideration.

> The United States Court of Appeals for the Third Circuit has held that "[t]he purpose of a motion of reconsideration is to correct manifest errors of law or fact or to present newly discovered evidence." Cohen v. Austin, 869 F. Supp. 320, 321 (E.D. Pa.1994) (citing Harsco Corp. v. Zlotnicki, 779 F.2d 906, 909 (3d Cir. 1985), cert. denied, 476 U.S. 1171, 106 S. Ct. 2895, 90 L. Ed.2d 982 (1986)).

> Accordingly, a district court will grant a party's motion for reconsideration in any of three situations: (1) the availability of new evidence not previously available, (2) an intervening change in controlling law, or (3) the need to correct a clear error of law or to prevent manifest injustice. Reich v. Compton, 834 F. Supp. 753,755 (E.D. Pa.1993) (citing Dodge v. Susquehanna Univ., 796 F. Supp. 829, 830 (M.D. Pa.1992)).

New Chemic, Inc. v. Fine Grinding Corp., 948 F. Supp. 17, 18-19 (E.D. Pa. 1996). Because of the interest in finality, at least at the district court level, motions for reconsideration should be granted sparingly; the parties are not free to relitigate issues the court has already decided. Rottmund v. Continental Assurance Co., 813 F. Supp. 1104, 1107 (E.D. Pa. 1992). Stated another way, a motion for reconsideration is not properly grounded in a request for a district court to rethink a decision it has already made, rightly or wrongly. Glendon Energy Co. v. Borough of Glendon, 836 F. Supp. 1109, 1122 (E.D. Pa. 1993).

Many parties who lose motions, especially for failures of proof, seek to offer more evidence and ultimately to overturn their loss through reconsideration, after being instructed by the court on what it takes to be the dispositive weaknesses of their case. But motions for reconsideration must be strictly reviewed for at least four reasons. First, to do otherwise would tend to undercut the court's first decision and transform it into an advisory opinion, which we may not allow. Coffin v. Malvern Savings Bank, 90 F.3d 851,853 (3d Cir. 1996) ("oldest and most consistent thread in the federal

law of justiciability is that federal courts will not give advisory opinions," quoting 13 Wright, Miller & Cooper, Federal Practice and Procedure, § 3529.1 at 293). Second, motions for reconsideration may run counter to the operation of the Federal Rules of Civil Procedure, which - when observed by the parties - provide all the necessary safeguards to promote fair decisions at each stage of the case. Third, broad interpretation of motions for reconsideration is not supported by controlling precedent. And last but not least, reconsideration of dispositive decisions hinders the court's ability to decide motions awaiting resolution that have yet to be reviewed once, let alone twice.

Oddi argues a variety of errors in the court's summary judgment decision. He filed three documents related to his request - the motion itself, Doc. No. 95, a supporting brief, Doc. No. 96, and a reply brief, Doc. No. 102 - in which the errors asserted vary somewhat. Oddi has no previously unavailable evidence or changed law relying instead on manifest injustice and clear errors of law.

A. Failure to Hear Argument, Expand the Record, or Conduct Evidentiary Hearing

In his motion Oddi argues that the court erred in failing to conduct a hearing before issuing its decision, which "is required to prevent manifest injustice," Doc. No. 95 ¶ 10, and denied him "the opportunity to adequately respond to Defendants' Motions for Summary Judgment." Id. ¶ 13. His arguments about the court's failure to hear argument, expand the record, or conduct an evidentiary hearing have a common strand, and so will be addressed together.

1. Argument of Summary Judgment Motions

As a matter of course we do not hear argument on summary judgment motions or any other type of motion on which we issue written decisions.[1] This is so despite Local Rule 7.1.F, which contemplates that oral argument will accompany dispositive motions, "unless expressly precluded by the court." The court has precluded oral argument on dispositive motions by its custom and practice. Local Rule 7.1.F also for the scheduling of oral argument by the clerk for motions not resolved within 90 days. That was not done in this case, nor is it routinely done. If it were, we likely would overrule the clerk's action in most if not all cases. The reason is that we have not found such arguments to be an efficient use of court time, and wish to preserve our discretion to set our own schedules. In the district courts, unlike the federal appellate courts, oral argument is not a focus of the proceedings because of all the other opportunities for interaction with the litigants in which the court learns about the case. In light of this continual interactive process, oral argument is rarely needed to render a fair decision given the other demands of the docket. Nor is there any reason to suspect that oral argument would have informed us more fully than did the written submissions. Thus, short of some controlling authority, we consider the scheduling of argument on motions as a matter wholly within the court's discretion. This contention provides no basis for reconsideration.

---

[1] An argument is to be distinguished from proceedings initiated by motion which typically involve the need for taking evidence in open court, such as motions for preliminary injunction.

2. Expansion of the Record

The record shows that the court was not restrictive in how it handled Oddi's experts. Oddi's expert on vehicle defects was John Noettl. In December 1997, Oddi moved to supplement Noettl's first expert report to respond to testimony from Ford's expert. Oddi sought to have Noettl provide evidence about the purpose of the bumper, one of the truck's allegedly defective parts, and to state that defendants should have warned occupants about the weakness of the bumper. Doc. No. 61. Ford and Grumman filed their oppositions to the motion on the basis that Noettl's opinion on lack of warning improperly injected a new theory in the case at a late stage. Doc. Nos. 62, 63. The court permitted the supplementation, but also allowed defendants an opportunity to respond. See Order attached to Doc. No. 61. Following the court's order both defendants moved for reconsideration of the order. Doc. No. 65. The court still did not limit Oddi's supplementation of his pretrial statement with evidence of a theory that had not been pursued to that point. Instead, the court extended discovery and permitted additional discovery of Noettl on the warning issue. Doc. Nos. 68, 69.

Oddi also correctly notes that he had pending at the time of the court's summary judgment decision a Motion to Strike Defendants' Reply Brief and/or in the Alternative to File Reply Brief and/or Supporting Affidavits in Opposition to Defendant's Reply Brief. Doc. No. 91. Oddi objected to Grumman's filing of a reply brief because it was not contemplated in the court's scheduling order.

The court did not rule on this motion before granting summary judgment. While on the surface and in hindsight this

no doubt appears to be a lost opportunity for Oddi to have supplemented the record with evidence and held off summary judgment, it actually is not. The chief reasons Oddi did not lose an opportunity to make an additional evidentiary showing is because the reply brief had no effect on the court's decision, and provided no additional evidence. In the brief, Grumman argues that Noettl: did not state how the truck was defective, which is an argument repeated from Ford's opening brief; did not distinguish between actual and enhanced injuries, which was not a basis for the court's decision; is not qualified to render an opinion on injuries, which was not a basis for the court's decision; and did not establish a scientific basis for his opinion, which is also repeated from Ford's opening brief. Doc. No. 89. Instead, the court decided the summary judgment motions on the most basic premise advanced by either defendant, and one which squarely invokes a duty of the court: the sum of the evidence presented by and about Noettl shows that his opinions did not as a matter of law satisfy the standards for expert testimony established by Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 125 L. Ed.2d 469 (1993), and its construction by Third Circuit.

As it was, Oddi had ample opportunity to present evidence to satisfy his burden on summary judgment. Defendants pointed out the flaws in his expert's opinions in their opening briefs. Oddi responded with a considerable amount of evidentiary material, in the form of nine exhibits. Doc. No. 84. These exhibits included Noettl's expert report; his supplemental expert report; his curriculum vitae; excerpts

from his deposition; and his affidavit.[2] Noettl's affidavit was filed for the specific purpose of rebutting defendants' summary judgment arguments. There was no obstacle to furnishing evidence in this document, the contents of which Oddi controlled, that another opportunity to submit evidence would have cured.[3] We eventually examined all Oddi's expert evidence for compliance with Daubert and Kannankeril v. Terminix Int'l, Inc., 128 F.3d 802 (3d Cir. 1997), which collects Third Circuit authority on the subject, and found it lacking. Under these circumstances, we do not find that Oddi was improperly deprived of his ability to expand the record.

Moreover, Oddi's motion to strike Grumman's reply brief was not filed solely for the purpose of submitting additional evidence. By his own terms, Oddi would have been just as satisfied if the court simply ignored the reply brief, which in effect we did. If Oddi had new evidence he wished to submit, he did not describe it in his motion.

Accordingly, we see no clear error in how the court handled Oddi's ability to make a record on summary judgment.

---

[2] The original of Noettl's summary judgment affidavit also appears separately in the file at Doc. No. 85.

[3] We also point out that Federal Rule of Civil Procedure 26(a)(2) sets forth the appropriate contents of an expert's report. Thus, Rule 26 provides not only an opportunity to develop information to buttress an expert's opinion, but an obligation to do so. A more studied adherence to this obligation most likely would have been useful in opposing summary judgment.

3. Conducting an Evidentiary Hearing

Oddi's most substantial argument is whether the court should have conducted some type of hearing before granting summary judgment. He cites In re Paoli RR Yard PCB Litigation, 35 F.3d 717 (3d Cir. 1994), in arguing that the Third Circuit "strongly suggests" that district courts should conduct evidentiary hearings on challenges to expert testimony. Doc. No. 96 at 4. While that opinion dealt with the conduct and results of an in limine hearing on expert testimony, he pointed us to no particular passage in that case where we could find the cited suggestion in the form of a rule for district courts. The Third Circuit's opinion In re Paoli RR Yard PCB Litigation, 916 F.2d 829 (3d Cir. 1990), does seem to require an in limine hearing given the circumstances of that case, id. at 854-55, even while stating in the same opinion that Third Circuit precedent does not require that our factual inquiry involve a hearing, id. at 853.

We did not have a hearing in this case because defendants' challenge was raised in the context of a Rule 56 motion. Our inquiry on Rule 56 in general (whether there are genuine disputes of material fact and whether the moving party is entitled to judgment as a matter of law) surely differs from our inquiry on a challenge to the admissibility of expert testimony (whether a preponderance of evidence demonstrates that an expert's opinion is reliable, Paoli II, 35 F.3d at 744). In our view, however, Rule 56 supplies all the process necessary for a fair determination, even when an expert's opinion is challenged. This is not the case when an expert's opinion is disputed through a motion originally brought as one in limine -- for example, when only one of several experts is challenged -- when the adversarial procedures are not

similarly established by controlling rules and case law. That being said, we would not routinely schedule a hearing on a summary judgment motion challenging the admissibility of an expert's opinion, but neither would we foreclose the possibility of conducting an evidentiary hearing if circumstances called for it.

Rule 56 thus affords in most cases the procedures necessary to decide a challenge to expert testimony, when raised in that context. We believe our finding is supported by the Supreme Court's emphasizing in Daubert, 509 U.S. at 594, 125 L.Ed.2d at 483-84, that the inquiry into an expert's reliability is "a flexible one." Any question about how flexible was dispelled by the Court's decision in Kumho Tire Co. v. Carmichael, 143 L. Ed.2d 238,252-53 (1999). The Court there stated that

> [t]he trial court must have the same kind of latitude in deciding how to test an expert's reliability, and to decide whether or when special briefing or other proceedings are needed to investigate reliability, as it enjoys when it decides whether that expert's relevant testimony is reliable.

(Emphasis in original.)

In sum, we did not conduct a hearing on defendants' motions for summary judgment for three reasons. First, the parties had adequate process to fully contest the issues without an evidentiary hearing. Second, Oddi gave us no authority then and none now that an evidentiary hearing was required. Third, as our March 31, 1999 Memorandum Opinion

explains, the issue of the validity of Oddi's expert's opinion was not close. Our re-reading of Supreme Court and Third Circuit authority on the subject reinforces our view. We also note that Oddi did not request oral argument or an evidentiary hearing before the court ruled against him, though the court met with counsel nine days before issuing the summary judgment decision, where the pending motions were mentioned, though not argued. Only after the court ruled against him was a hearing necessary to prevent manifest injustice. Accordingly, the absence of an evidentiary hearing offers no basis for us to reconsider our summary judgment decision.

B. Disregard of Plaintiffs Design Defect Claim

Oddi also claims that we disregarded his design defect claim concerning the vehicle's "propensity to ramp" on impact with objects such as the guardrail which he in fact struck. He points to a statement Noettl made in the fourth paragraph of his December 4, 1997 four-paragraph report where Noettl states, after discussing why the truck was defective for lack of warnings, that it was also defective for poor design.

> Due to the vehicle's height, weight, and design the vehicle has a propensity to ramp up onto the guardrail in foreseeable collision situations. As a result, this vehicle's design is defective from a safety standpoint.

Doc. No. 96, Exhibit A.

The context of this claim leads to the appropriate conclusions about its validity. Noettl's statement about the vehicle's height, weight, and design constituting a defect is mentioned in passing in a supplemental expert report whose main subject was defective failure to warn. Noettl's opinion on defective warning supported a tardy claim that itself generated strenuous objections from the defendants. Had defendants understood Oddi to be making an independent design defect claim based on the vehicle's height and weight, they had no reason to exclude that claim from their otherwise comprehensive summary judgment motions.

That defendants apparently did not conclude that Oddi was making a design defect claim independent of his defect claims related to the bumper and the floor is understandable. When questioned at his deposition about his opinion as to design defect, Noettl's testimony was confusing, and did not convey the impression that a design defect claim was a theory of recovery distinct from his other theories regarding the bumper and floor.[4] Thus, the reason Oddi can even raise

---

[4] Noettl's testimony from his second deposition concerning this statement in his December 1997 report includes the following.

Q: Well, okay. But I'm looking at your statement here, and you're telling me that this vehicle, due to its height, weight, and design, has a propensity to ramp?
A: It would have more of a propensity.

Q: Okay. You have to explain that to me.
A: Okay.

Q: This is the first time I've heard this.
A: Right.

Q: What's with the height of this vehicle? What does that have to do with it?
A: It's the design of the vehicle. The CG height, center of gravity height of the vehicle, is dependent on the height, somewhat on the height of the vehicle. Although, you can design a vehicle with the same height and have a lower center of gravity.

Q: What did that have to do with this accident?
A: The -- this would -- This vehicle would have more of a tendency to ride up on the guardrail than a shorter vehicle.

Q: Okay. What did the height of this vehicle have to do with this accident?
A: I don't know if the height had anything to do with it.

Q: Okay. All right. Are you saying that this is a big truck?
A: Correct.

Q: It's not a little sports car?
A: Correct.

Q: As a result, it reacts differently?
A: Okay. Yes, that's true.

Q: Is that all you're really saying?
A: Well, I'm saying I saw no effort by Grumman to address its problems, is all I'm saying.

Q: Okay.
A: But what you're saying is also true, they know it reacts

differently.

Q: Okay.
A: They know it's different.

Q: All trucks will?
A: Yeah.

Q: So you're not telling me that the height of this vehicle should have been any different?
A: No.

Q: And you're not saying that the weight should have been any different?
A: No.

Q: And you're not saying that the design of the vehicle should have been any different?
A: I am saying that --

Q: Well, wait. Other than what you've been through before, is there anything new? Because now you've thrown design in again.
A: Right. No. I'm saying what I said before, and that is design.

Q: Okay. No change here?
A: No changes.

Q: All right. "Has a propensity to ramp." When you say that, you're just telling me that this is a bigger truck. And as a bigger truck, you believe it has more of a propensity to ramp than smaller vehicles?
A: That's correct.

survival of a design defect claim is not because defendants avoided seeking summary judgment on that claim, or because it is otherwise shielded from summary judgment. Rather, the reason is that defendants did not believe such a claim existed as a separate theory of recovery, as their responses to his motion for reconsideration assert, and as Noettl's testimony suggests.

Had such a claim been properly raised, we have little doubt that it would be subject to summary judgment for the same reasons the court granted summary judgment against Oddi's other claims. Even in the deposition excerpts Oddi provides, Noettl does not provide a basis on which the court could examine the reliability of his Conclusory opinion that

---

Q: That's all there is to it?
A: That's correct.
[Plaintiff's counsel:] Okay.

Q: And is that a defect?
A: No. That's not in and of itself a defect. The defects are the things we discussed. And this is knowledge of just like you -- we have stated here, that the manufacturer had about the vehicle's design.

Noettl Deposition at 50-52, attached to Doc. No. 96. This excerpt is enough to support two conclusions. First, Noettl did not make plain that his opinion about any purported design defect was independent of his opinions about the other defects on which defendants based their defense. Second, even had such a separate design defect claim been made, it suffered from the same infirmities that led to the adverse summary judgment decision on Oddi's other claims; namely, a total failure to supply a scientific basis for any such opinion.

the vehicle's height, weight, and design were defective. Oddi's design defect claim therefore is not something the court wrongly disregarded, and furnishes no basis to reconsider our decision.

Oddi makes several other arguments for reconsideration, such as that Noettl's arguments were admissible, that the court improperly based its decision on his conclusions rather than his reliability, and that we erred in dismissing his negligence claim. These contentions have no merit in light of our summary judgment decision and will not be analyzed separately.

In conclusion, the court is not oblivious to the result of its decision, in which a grievously injured person will not have his day in court. After examining the issues again, however, we find no clear error or manifest injustice in our decision. Oddi was afforded the procedure by which he could have preserved his right to trial. The substance of an essential element of his case was challenged in a manner that triggered the court's role, in language others have chosen, as a gatekeeper. The standards that experts must meet are openly established and regularly repeated and refined in opinions from the Third Circuit. Oddi's expert's opinions fell convincingly short of these standards. Oddi's motion for reconsideration has not persuaded us that his expert was then or is now prepared to give testimony that meets the standards of reliability that clear the path to admissibility. Without this testimony, his claims are defective.

In accordance with the foregoing, plaintiffs Motion for Evidentiary Hearing and for Reconsideration of Grant of

Summary Judgment Pursuant to Federal Rule of Civil Procedure Rule 59(e), Doc. No. 95, is DENIED.

SO ORDERED this 1 day of September, 1999.

/s/_____
ROBERT J. CINDRICH
United States District Judge

APPENDIX D

IN THE UNITED STATES DISTRICT COURT FOR THE WESTERN DISTRICT OF PENNSYLVANIA

[Filed March 31, 1999]

Civil Action No. 95-1341

DAVID ODDI,
Plaintiff,

v.

FORD MOTOR CO.,
Defendant,

v.

GRUMMAN OLSON BODIES, INC., et al.,
Third Party Defendants.

DAVID ODDI,
Plaintiff,

v.

OLSON BODIES, INC., and

GRUMMAN ALLIED)
INDUSTRIES, INC.,)
Defendants.)
_____)

MEMORANDUM OPINION

CINDRICH, District Judge March 31, 1999

I. Background

This is an action for personal injuries sustained by David Oddi during the course of his employment. Oddi was employed by Continental Baking Company as a deliveryman. While driving a company bread truck on Interstate 79 on June 21, 1993, Oddi hit a guard rail and bridge abutment. He suffered massive injuries, including loss of both legs and permanent damage to his left arm. He was 28 years old at the time.

Oddi separately sued the manufacturers of the truck chassis, Ford Motor Company, and the truck body, now known as Grumman Olson Bodies, Inc., under theories of strict liability, negligence, breach of warranty, and belatedly, failure to warn. The cases were consolidated shortly after they were filed. Ford is accused of furnishing a defectively weak front bumper that allegedly allowed the truck to ride up on the guard rail, which in essence placed the vehicle on a track into the concrete bridge abutment. Grumman is accused of furnishing a defectively weak floor for the truck passenger compartment, which permitted the bridge abutment to intrude through the floor in a way that caused Oddi's injuries.

Defendants Ford and Grumman have moved for summary judgment on all claims against them. Oddi has duly responded.

II. Standard of Decision

Summary judgment is mandated where the pleadings and evidence on file show there is no genuine dispute of material fact, and that the moving party is entitled to judgment as a matter of law. Fed. R.Civ. P. 56(c). Summary judgment is appropriate against a party who fails to make a showing sufficient to establish the existence of an element essential to that party's case on which it will bear the burden of proof at trial. Celotex Corp. v. Catrett, 477 U.S. 317, 322 (1986). A genuine issue does not arise unless the evidence, viewed in the light most favorable to the non-moving party, would allow a reasonable jury to return a verdict for that party. Anderson v. Liberty Lobby Inc., 477 U.S. 242, 248-49 (1986). A fact is material when it might affect the outcome of the suit under governing law. Id. at 248. In reviewing any facts alleged to create a genuine issue, if the court concludes that "the record taken as a whole could not lead a rational trier of fact to find for the non-moving party, there is no 'genuine issue for trial,'" and summary judgment must be granted. Matsushita Elec. Ind. Co. v. Zenith Radio Corp., 475 U.S. 574, 587 (1986).

We may not weigh evidence or determine credibility on summary judgment, however, since the process does not lend itself to this type of determination Country Floors, Inc. v. Gepner and Ford, 930 F.2d 1056, 1061-62 (3d Cir. 1991). Thus, resolution of issues that involve the parties' intent or

state of mind are generally unsuitable for summary judgment. Young v. Quinlan, 960 F.2d 351,360 n.21 (3d Cir. 1992).

III. Discussion

A. Standards Governing Admissibility of Expert Testimony

Oddi's claims rest on the theory that the front bumper and floor of the truck were defective. His expert in the area of vehicle defects is John Noettl. Ford challenges Noettl's opinions as failing to satisfy the test for admissibility as established by Daubert v. Merrell Dow Pharmaceuticals, Inc. 509 U.S. 579 (1993), and interpreted and applied by the United States Court of Appeals for the Third Circuit.

On March 23, 1999, the Supreme Court of the United States clarified the application of Daubert in Kumho Tire Company, Ltd. v. Carmichael, 1999 WL 152455 (U.S.). That case involved the admissibility of a plaintiff's expert's opinion on the reasons for tire failure on a minivan. The blowout resulted in an accident in which one person was killed and others severely injured. The district court excluded the expert's testimony because it satisfied none of the factors mentioned in Daubert for testing the reliability of expert opinion. The Eleventh Circuit reversed, finding that Daubert did not apply to experts who relied on skill or experience, as opposed to scientific principles. In reaching this conclusion, the court of appeals followed one path in a split among the circuits on the question of Daubert's applicability to experts who rely solely on experience or training.

The Third Circuit recognized this split in Lauria v. National Railroad Passenger Corp., 145 F.3d 593, 599 n.7. (3d Cir. 1998), commenting that "[w]hether Daubert even applies outside the scientific context remains in dispute." The court also expressly declined to apply Daubert to the opinion of a railroad track maintenance expert at issue there.

> Because Slavin's opinion is based on his observations and familiarity with "Maintenance of Way Procedures" and is gleaned from years of practical experience, the discipline in this case is so different from a scientific inquiry that we see no need to engage in a detailed analysis regarding the scientific reliability of the proffered opinion.

Id.[1]

The Supreme Court in Kumho reversed the Eleventh Circuit's decision and settled this issue. The Court determined that there is no basis under Federal Rule of Evidence 702 for distinguishing scientific from technical or specialized knowledge. Accordingly, district courts should apply some-

---

[1] Despite the seeming breadth of Kumho, it is possible that there is still room for experience-based opinions as to which there is no readily available body of scientific principles. After all, it would be difficult to question the Third Circuit's conclusion in Lauria about the potential futility of inquiring into tests, studies, and techniques to evaluate an opinion that a railroad employer should not leave stray pieces of wood lying between railroad tracks. We leave this nuance to further development by the appellate courts, for in this case, a relevant body of science is clearly extant.

form of "gatekeeping" determination to experts regardless of the basis for their knowledge.

The other major finding we take from Kumho is the Court's clarification of the flexibility afforded the district court in performing its gatekeeping function. This flexibility is present not only in deciding what standards the gatekeeper should apply, but also in how rigidly they should be applied.

> The conclusion, in our view, is that we can neither rule out, nor rule in, for all cases and for all time the applicability of the factors mentioned in Daubert, nor can we now do so for subsets of cases categorized by category of expert or by kind of evidence. Too much depends upon the particular circumstances of the particular case at issue.
>
> * * *
>
> [W]e conclude that the trial judge must have considerable leeway in deciding in a particular case how to go about determining whether particular expert testimony is reliable.
>
> * * *
>
> [W]hether Daubert's specific factors are, or are not, reasonable measures of reliability in a particular case is a matter that the law grants the trial judge broad latitude to determine.

199 WL 152455 *9, *10, *11.

Before Kumho, the Third Circuit had produced a considerable body of law related to Daubert. In our view, much of it remains unchanged, and still controls our decision. For example:

> Under the Federal Rules of Evidence, it is the role of the trial judge to act as a "gatekeeper" to ensure that any and all expert testimony or evidence is not only relevant, but also reliable. Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 589, 113 S. Ct. 2786, 2794-95, 125 L.Ed.2d 469 (1993). The. Rules of Evidence embody a strong and undeniable preference for admitting any evidence which has the potential for assisting the trier of fact. See Holbrook v. Lykes Bros. S.S. Co., 80 F.3d 777, 780 (3d Cir. 1996). Rule 702, which governs the admissibility of expert testimony, has a liberal policy of admissibility. See Holbrook, 80 F.3d at 780; Paoli [R.R. Yard PCB Litigation], 35 F.3d [717] at 741 [(3d Cir. 1994)].
>
> Rule 702 has three major requirements: (1) the proffered witness must be an expert; (2) the expert must testify about matters requiring scientific, technical or specialized knowledge; and (3) the expert's testimony must assist the trier of fact. See Paoli, 35 F.3d at 741-42. The issue of this appeal involves the second requirement of the expert's testimony. In interpreting this second requirement, we have concluded that "an expert's testimony is

admissible so long as the process or technique the expert used in formulating the opinion is reliable." Id., at 742 (citing Daubert, 509 U.S. at 589, 113 S.Ct. at 2794-95). In order for the expert testimony to be "reliable," we have required that the testimony be based on the "methods and procedures of science," rather than on "subjective belief or unsupported speculation." Paoli, 35 F.3d at 744. Moreover, Daubert does not set up a test of which opinion has the best foundation, but rather whether any particular opinion is based on valid reasoning and reliable methodology. Admissibility decisions focus on the expert's methods and reasoning; credibility decisions arise after admissibility has been determined. See Paoli, 35 F.3d at 743-46.

There are several factors that a district court should take into account in evaluating whether a particular scientific methodology is reliable. See Paoli, 35 F.3d at 742. Although these factors are neither exhaustive nor applicable in every case, they provide a convenient starting point for analyzing the opinion of Dr. Gerson. Our inquiry focuses on principles and methodology and not on the conclusions they generate. Id. at 744. The analysis of the conclusions themselves is for the trier of fact when the expert is subjected to cross-examination. Id. The Kannankerils needed to demonstrate by a preponderance of evidence

> only that Dr. Gerson's opinion was based on "good grounds." Id.

Kannankeril v. Terminix Intel, Inc., 128 F.3d 802, 806-07 (3d Cir. 1997) (footnote omitted). The court of appeals has also listed the factors we should examine. In forecasting Kumho and the Supreme Court's recognition of the flexibility to be accorded trial judges, the Third Circuit described these factors as nonexclusive guidelines.

> (1) Whether a method consists of a testable hypothesis;
> (2) whether the method has been subject to peer review;
> (3) the known or potential rate of error;
> (4) the existence and maintenance of standards controlling the technique's operation;
> (5) whether the method is generally accepted;
> (6) the relationship of the technique to methods which have been established to be reliable;
> (7) the qualifications of the expert witness testifying based on the methodology; and
> (8) the non-judicial uses to which the method has been put.

Paoli, 35 F.3d at 742 n. 8; accord Heller v. Shaw Industries, Inc., 167 F.3d 146, 152 (3d Cir. 1999).

B. The Challenge to Plaintiff's Liability Expert

With regard to the testimony of John Noettl, Oddi's expert, Kumho certainly settles a threshold question. By Oddi's own admission, Noettl's opinions are based on "[b]asic

engineering principals" [sic] and "his experience and training." Oddi's Response to All Motions for Summary Judgment, Doc. No. 84 ("Oddi's Response"), at 16. While Oddi provided no case support for the proposition that such an opinion might be outside the scope of Daubert -- the court found this authority in our own research -- before Kumho he might have at least attempted this argument. See, e.g., Compton v. Subaru of America, Inc., 82 F.3d 1513 (10th Cir. 1996) (expert permitted to rely on experience to testify about appropriate strength of automobile roof), cert. denied, 136 L.Ed.2d 536 (1996). But this argument is now foreclosed. Consequently, we must test Noettl's opinions for reliability pursuant to Daubert and the Third Circuit standards cited above.

In responding to defendants' summary judgment motions, and their references to Noettl's information and testimony, Oddi furnished four documents in which Noettl expresses his opinion: a June 16, 1997 "preliminary report," attached as Exhibit D to Oddi's Response; a December 4, 1997 supplemental report dealing with failure to warn, id. Exhibit C; a September 23, 1998 affidavit, id. Exhibit H (and Doc. No. 85); and excerpts from Noettl's deposition, which have no exhibit number but are attached to his Response. Other excerpts from Noettl's deposition appear in the defendants' summary judgment papers, which we cite below as necessary.

The portions of Noettl's June 16, 1997 report in which he states his opinion consist entirely of the following:

> It is my opinion that the Step Van rode upon the guard rail because of the failure of

> the left side of the front bumper. This portion of the bumper was deformed back and inward allowing the left front wheel to ramp up and over the guard rail. Had the bumper not significantly deformed back and inward the vehicle would have been deflected by the guard rail.
>
> It is also my opinion that the floor board allowed intrusion by the guard rail and possibly the concrete barrier into the occupant compartment in area [sic] near the brake pedal and where the driver's feet and legs would be located. This intrusion was a direct cause of injuries to Mr. Oddi.
>
> Had the bumper and the floor board been properly structurally designed the vehicle would not have gone over the guard rail and the occupant compartment would not have been intruded [sic] by the guard rail and concrete barrier.

Oddi's Response Exhibit D. We note that Noettl's report is devoid of any recitation of the bases for his opinions as required by Federal Rule of Civil Procedure 26(a)(2).

Defendants' counsel eventually probed Noettl about his conclusions at his deposition.

> Question: Now, have you determined what the force was inflicted on the guardrail at the time of initial impact with the truck?

Answer: No, I haven't. No.

Question: Have you determined what force the truck inflicted on the bridge abutment and the rail on top of the bridge abutment when it made contact with that?

Answer: No. The reason for answering both those questions, you would have a range of variables, also, but guardrails are designed to absorb energy and deflect vehicles. You would have to make an awful lot of assumptions.

Question: Have you determined or measured the strength or rigidity of the guard rail?

Answer: No.

Question: You haven't ascertained how much force it could hold; is that correct?

Answer: That's correct.

Ford's Motion for Summary Judgment, Doc. No. 74, Exhibit 13 at 182-83.

Question: Do you know how much force it took to bend that bumper to the point where it's bent?

Answer: No, I don't.

Question: Do you know how much force that bumper was capable of sustaining without bending? Have you determined that?

Answer: I haven't determined that, right.

Question: Have you determined how the bumper should have been designed, assuming your scenario is correct and it bent on initial impact, so it would not have bent?

Answer: Yes.

Question: How should have it been designed?

Answer: It should have been design [sic] with either bracketry that would go from the frame rail out to the center part of that part of that bumper, or what I would refer to as a backing wedge.

Envision a piece of metal, let's say two inches thick, formed as a wedge to put in back of the bumper. The bumper curves a little bit, and if you fill that with that backing wedge – it's a rib, is what it is.

Question: It would be like a V?

Answer: That's right.

Doc. No. 74, Exhibit 13 at 188-89.

Question: What type of metal should the wedge be constructed from?

Answer: It could be the same as the bumper, if you wanted to, but you just turn it on end. You could have many, many choices on that.

Question: What if you used a brace? What type of metal should that brace be constructed from?

Answer: Again, you could use the same as the bumper. Again, you would have a lot of choices on that. The bracketry would probably not be as strong as the wedge. Probably not. Test it and maybe you would achieve a strength that would far exceed anything you could expect.

Question: What would the tensile strength or the gauge of the metal have to be on both of those options?

Answer: The way you go through that is look up in books and you say, "Here. We got some metal here and let's try this." Certain gauge, certain strength, something that is readily available. It's not a big thing, is what I'm trying to say. You certainly would not cut holes in it right at one of the most critical points of where your major bending force is going to occur, which is at your railing.

Question: So this would be something relatively simple to look up in a book, and you could determine

from the computations in some engineering book what you should be using. What would the name of the book be?

Answer: Any machine design book.

Question: Is that a particular book or is that a type of a book, machine design book?

Answer: That's a type of book.

Question: Could you give me an authority?

Answer: There are machine design books that give you all types of metal gauges. If you go through the design process for any of these things on a bumper, frame rails, exactly what they do – they don't sit down. They don't do finite element analysis. They look up in books what metal thickness, what's our yield strength, what's our tensile properties of this metal, bang, bang, bang. We're going to use this.

Question: Have you done that?

Answer: No. I haven't done that, no.

Question: So you don't know what the thickness would have to be, what the metal gauge, what the tensile strength –

Answer: Right.

Question: -- what type of material you would need to use; is that correct?

Answer: I told you I would use -- probably start with the same material that you have in the bumper. Take a piece of metal, turn it on its edge, put it in back of it, weld it on there for a test, see what strength you do gain out of this as far as impact, as far as bending moments and as far as shearing. You sure hope it won't sheer [sic] off. You would do that. You would say, "I want it a little bit stronger." The easiest way, by far, is to thicken the metal. That's all you have to do. Get a lower gauge metal and put that on there and try it again.

Question: How thick would the metal have to have been to have not deformed in this impact?

Answer: I would say, in my opinion, half inch to an inch and a half range would be more than adequate to withstand the force on edge. That's the thickness, not the width.

Question: What would the width be?

Answer: I don't know. Three inches or so, four inches.

Grumman's Motion for Summary Judgment, Doc. No. 76, Exhibit A at 191-94

In the course of his investigation, Noettl examined trucks similar to the one Oddi was driving for safety features

relevant to this case. He was asked about this at his deposition.

Question: Whose bread trucks? Who made them?

Answer: They were in front of a grocery store and I walked up and looked at them. I seen them on them.

Question: Was this during the pendency of this case?

Answer: Yes.

Question: You didn't make a note of what the bread truck was so you could go back and say, "Here's the design I'm proposing and somebody is already using this"?

Answer: I said that in my mind, and I had groceries and I didn't have a camera and nothing else.

Question: You don't remember the name of the bread company?

Answer: No, I don't. It might come to me. I can't tell you, no.

* * *

Question: You don't know whether or not those trucks would have sustained a bending of the bumper the same as this truck because we don't know what the forces are right?

Answer: I would say that they have a better chance, but I can't tell you more than that, no. That's correct.

* * *

Question: But what you've seen, you don't know whether or not that would have changed the scenario in this accident one way or the other.

Answer: I haven't evaluated that.

Doc. No. 74, Exhibit 13 at 195; 196; 197.

Noettl testified in a similar vein about the alleged defect of the truck floor.

Question: What was wrong with [the floor]?

Answer: It wasn't strong enough to prevent intrusion in this type of an accident into the occupant compartment, exposing the driver to the dangers of that intrusion.

Question: What should have been done?

Answer: The metal could have been made thicker. It could have been ribbed.

Question: How thick should it have been?

Answer: Well, the way I would do that is to thicken the metal and rib it and then do a test to see, if

> under these types of the foreseeable accidents, it would really retain the integrity of the occupant compartment.

Grumman Motion, Doc. No. 76, Exhibit A at 108-09. There is no indication Noettl performed any such tests.

After having the shortcomings of Noettl's opinions pointed out by defendants on summary judgment, Oddi supplied an affidavit from Noettl dated September 23, 1998. Doc. No 84, Exhibit H. In the affidavit, Noettl becomes slightly more specific regarding his suggested design changes. He states that the bumper should have been reinforced by eliminating the towing holes in it "and/or" welding steel reinforcement wedges to it. He also states that steel brackets should have been welded to the back of the bumper, and that "the bending and tensile properties and or metal thickness of the bumper" should have been increased. Id. ¶ 1C. As for the floor of the truck, he states that it should be reinforced by increasing the bending and tensile properties and metal thickness by. 125 inch increments "and/or" by forming ribs on the floor. Id. ¶ 1E.

As Noettl's statements demonstrate, he did no testing of any evidence. He identified no specific treatises, articles, or written authorities on any issue. He performed no calculations. He used no models or computer simulations. Instead, to form his opinion, he relied on his experience and training. His curriculum vitae shows considerable experience and training in the area about which he seeks to testify, Doc. No. 84 Exhibit I, and defendants do not challenge his qualifications. The issue is whether Oddi has sufficient

evidence that Noettl brought those qualifications to bear on the particular problems of this case.

We find that he has not. We need not measure his adherence to any of the Daubert-related factors identified by the Third Circuit because he satisfies none of them. He has not rendered an opinion like the one found in Kumho, where there was at least a particular methodology about tire failure to examine. Reduced to its essence, Noettl's theory is that the bumper and floor should have been made stronger, by using thicker metal or reinforcement. The absence of reviewable study, measurement, calculation, or reference accompanying these conclusions is sufficient to render them unreliable. He has not supplied us with the bases for his broad conclusions, and thus we are left with no means to test them.

Even beyond this finding, the variability and lack of precision which accompany these conclusions render them unhelpful to the jury. The bumper could be strengthened by using heavier gauge metal, brackets, wedges, or some combination of these. Strength is tested in some unstated way until some unstated degree of performance is achieved. If it is true that there are many potential solutions to the vehicle's alleged defects, Noettl does not assist the jury by being unable or unwilling to choose among them. F.R.Ev. 702; Kannankeril, 128 F.3d at 806. It may well be, and we have no reason to doubt, that he possesses substantial scientific, technical, or specialized knowledge. But it is not on display in this case.

Other elements of this particular case confirm our conclusion. If the alleged defect involved something like exposed gears or blades on an industrial machine, the

proposed alternative could take the form of a cover or guard. In most conceivable cases the composition of the cover -- heavy plastic, wire mesh, sheet metal -- would matter little, so long as it was sturdy. The machine in this case, however, is heavy, mobile, long-lasting, and carries humans. These machines frequently collide. A lay person's understanding of physics reveals that if car components are made too rigid, the forces of collisions will not be absorbed by the vehicle, but rather will be transmitted to the occupants, or the occupants of another vehicle. Good vehicle design thus must occupy a range between parts that are too soft and too rigid. The summary judgment record gives no indication that Noettl's opinions accounted for such issues to any appreciable extent.

In sum, the Supreme Court in Kumho reaffirmed our gatekeeping function as a way "to make certain that an expert, whether basing testimony upon professional studies or personal experience, employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field." 1999 WL 152455 at *10. "Engineering testimony rests upon scientific foundations, the reliability of which will be at issue in some cases." Id. at *9. We are required to look for the methods and procedures of science in considering testimony of this type. Noettl's opinions are so facially devoid of rigor or science that we cannot consider them reliable. By logical extension, they therefore are not admissible.

Two other matters should be addressed. First, Oddi retained an expert in biomechanics, Leon Kazarian, to testify about how Oddi received his injuries. Kazarian's report is attached to Oddi's Response at Exhibit G. The report, dated June 18, 1997, is three pages. Two pages are taken up by a

list of the materials Kazarian reviewed and a list of Oddi's injuries. The portion of the report labeled "Biomechanical Analysis and Opinions," consists entirely of the following:

> David Oddi struck a guardrail mounted and continued to ride the guardrail to the point when the front end of the vehicle impacted the end of the concrete bridge barrier.
>
> On impact, the end of the bridge pierced and penetrates the driver's occupant compartment impaling, cutting and crushing Mr. Oddi's extremities.
>
> David Oddi was found outside the vehicle on the grassy slope next to the bridge in question.

Id. at 3. Given the brevity and vagueness of his opinion, Kazarian, measured by the same standards used above, is not a substitute for Noettl in staving off summary judgment.

Second, Oddi contends that defendants themselves never tested their design. The brief answer to this contention is that, while such a course carries obvious risks, manufacturers do not have to satisfy Daubert when producing their wares.

IV. Conclusion

Where the bumper and the floor are concerned, Oddi makes claims against their crashworthiness. Crashworthiness is a subset of strict products liability theory in Pennsylvania.

Habecker v. Clark Eqpt. Co., 36 F.3d 278, 284 (3d Cir. 1994). "[T]he crashworthiness doctrine imposes liability on the manufacturer not for causing the accident, but rather for failing to minimize the injuries or even increasing the severity of the injuries sustained in an accident brought about by a cause other than the alleged defect." Id. at 283. The prima facie elements of a crashworthiness case are:

> (1) that the design of the vehicle was defective; (2) that when the design was made, an alternative, safer design, practicable under the circumstances existed; (3) what injuries, if any, the plaintiff would have received had the alternative, safer design, been used; and (4) what injuries were attributable to the defective design.

Id. at 284. Oddi does not dispute the applicability of this standard, or its formulation, to his products liability claims. Indeed, he cites the same test. Oddi's Response at 6. Without admissible testimony from an expert, Oddi cannot establish defects, safer alternatives, or causation. Defendants' motions for summary judgment will be granted as to these claims.

The elements of strict liability and breach of warranty are essentially the same. Gumbs v. Intern'l Harvester, Inc., 718 F.2d 88, 94-95 (3d Cir. 1983). If Oddi has no source of evidence to prove defect and causation, he will be unable to prove lack of fitness and causation. These claims are also subject to summary judgment.

Similarly, a negligence claim against a manufacturer involves proof of a defect and a causal connection between

the defect and the injury. Dambacher v. Mallis, 485 A.2d 408,424 (Pa. Super. 1984). Oddi has no evidence on these elements absent Noettl's testimony, entitling defendants to summary judgment.[2]

Finally, after Oddi had filed his pretrial narrative statement and expert reports, he supplemented, with court approval, Noettl's expert report to furnish Noettl's opinion that the truck was defective because Ford failed to warn Grumman about the weakness of its bumper, and that Grumman failed to warn its customers about the lack of occupant protection provided by the truck's weak bumper and weak floor. Oddi's Response Exhibit C. This purported claim, however, is based on the existence of defective conditions in the bumper and floor. Without evidence that these components were defective, which evidence consists of Noettl's inadmissible opinions, this claim also collapses.

An order consistent with this memorandum opinion will be entered.

---

[2] In several unpublished decisions, the Eastern District of Pennsylvania has granted defendants' motions for summary judgment for lack of expert testimony when plaintiffs have made claims under strict liability, negligence, and breach of warranty. Hodge v. Caterpillar, Inc., 1992 WL 98415 (E.D. Pa.); McKenna v. DuPont Co., 1988 WL 71271 (E.D. Pa.), aff'd 866 F.2d 1411.(3d Cir. 1988) (table).

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT
OF PENNSYLVANIA

[Filed March 31, 1999]

Civil Action No. 95-1341

DAVID ODDI,
Plaintiff,

v.

FORD MOTOR CO.,
Defendant,

v.

GRUMMAN OLSON BODIES, INC., et al.,
Third Party Defendants.

DAVID ODDI,
Plaintiff,

v.

OLSON BODIES, INC., and GRUMMAN ALLIED INDUSTRIES, INC.,
Defendants.

ORDER

In accordance with the accompanying memorandum opinion, Ford Motor Company's Motion for Summary Judgment, Doc. No. 74, is GRANTED. Defendant Grumman Olson Bodies, Inc.'s Motion for Summary Judgment, Doc. No. 76, is GRANTED. Defendant Grumman Olson Bodies, Inc.'s Motion for Partial Summary Judgment as to Losses Paid By Workers' Compensation, Doc. No. 72, is DENIED as moot.

The Clerk is directed to mark this case closed.

SO ORDERED this 31 day of March, 1999.

/s/_____
ROBERT J. CINDRICH
United States District Judge

APPENDIX E

IN THE UNITED STATES DISTRICT COURT FOR THE WESTERN DISTRICT OF PENNSYLVANIA

[Filed May 10, 1999]

Consolidated At No. 95-1341

DAVID ODDI,
Plaintiff,

v.

FORD MOTOR CO.,
Defendant,

v.

GRUMMAN OLSON BODIES, INC., OLSON BODIES, INC., GRUMMAN ALLIED INDUSTRIES, INC., t/d/b/a GRUMMAN OLSON,
Third Party Defendants.

DAVID ODDI,
Plaintiff,

v.

GRUMMAN ALLIED)
INDUSTRIES, INC., and)
OLSON BODIES, INC.,)
Defendants.)
)
v.)
)
FORD MOTOR CO.,)
Third Party Defendant.)
)

Judge Robert J. Cindrich

PLAINTIFF'S REPLY TO DEFENDANTS' RESPONSE TO MOTION FOR RECONSIDERATION

AND NOW, comes the Plaintiff, David Oddi, by and through his attorneys, Paul A. Tershel, Esquire, Mary Chmura Conn, Esquire and Tershel & Associates and files the within Reply to Defendants'

* * * *

EXHIBIT A

It is my opinion that the Step Van is defective from a safety standpoint because it ramped up the guard rail. It was the design of the Step Van that caused it to ramp up the guard rail. Guard rails are designed to deflect vehicles not to act as a "ramping" Mechanism just as median barriers on highways are designed to deflect vehicle not to allow them to "ramp" over the barrier. It is the responsibility of the vehicle manufactures to design and produce a vehicle that from a

safety standpoint it is compatable with the safety design and construction of the highways on which the vehicle operates. There are many examples of this compatibility.

The manufactures of the Step Van should have been aware of the types and performances of the guard rails used on the highway system through out the country. There are thousands of such guard rails such as was encountered by the Oddi vehicle. All of them have similar designs to prevent a vehicle from "ramping" up and over the railing.

The manufactures of the Step Van should have known that the vehicle as designed was higher and heavy than a passenger vehicles or even a mini van or sport utility vehicle. The purpose of the vehicle was to deliver bread goods. Once it was decided to use such a design the manufactures should have foreseen that there would be guard rail encounters by the Step Van as it would be used in the thousand of miles traffic environment.

Realizing that such encounters would happen it is the burden of the manufacturer to design a vehicle that would not ramp the guard rails. This is not a difficult task even for this specialized vehicle. The bumper should have been reinforced so that it would not fail as it encounter the guard rail. While there are many ways to accomplish this – the most affective way is to install this reinforcement is to affix a metal wedge shape reinforcement behind the bumper. Such reinforcement was placed on the vehicle to protect other areas such as the steering gear box. (see photos.) The metal could be of the same material properties as the bumper installed on the Step Van. The wedge should be an inch to an inch and one half thick see photos. Instead of taking these simple steps to

strengthening the bumper the manufacture did just the opposite by cutting holes in critical areas of the bumper just adjacent to where the bumper attaches to the frame rails see photos. The holes significantly weaken the bumper in this area.

It is the responsibility of the manufacturer to design a vehicle to be compatible with the collision attenuation devices such guard rails used on the Nation's highways. The design of the Step Van did not allow of this compatibility and it is therefore effective from a safety standpoint and made unreasonably dangerous to be used its present design condition for its in intended use on the highways.

The design changes proposed in my affidavit and deposition would not reduce the utility of he Step Van in any way.

Because of the height of the Step Van chassis and floor board should have been strengthened by increasing the metal thickenss and adding "webbing" to the floor board area. The metal thickness of one half inch would have resulted in preventing the intrusion into the occupant. compartment of forseable forces acting on the floor board on road driving crashes.

References:

Standard Handbook of Machine Design.
Shigley & Mischke

Strengeth of Materials
J. P. Den Hartog

Mechanical Engineers' Handbook
Meyer Kutz

Structural Analysis
Schaum's Outline Series

Strength of Materials
Schaum's Outline Series 2nd, 3rd Ed.

Traffic and Highway Engineering
Nicholas J. Garber, Lester A. Hoel

APPENDIX F

AFFIDAVIT OF JOHN N. NOETTL

[September 23, 1998]

I, John Noettl, the under signed swear and affirm that the facts and statements setforth below are true and correct to the best of my personal knowledge, information and belief and I understand that false statements made herein are subject to the penalties of 18 Pa. C. S. Section 4904, relating to under sworn falsification to authorities and other such applicable State or Federal Law.

1. Given the basic design of this vehicle, the following is a description of alternative designs that in my opinion, would have (1) prevented the Oddi vehicle from ramping the guard rail and (2) prevented the intrusion which occurred of structural components into the occupant compartment.

A. A reinforced bumper. The bumper on the subject vehicle had a measured 3.5 X 6.5 inch holes at critical stress points next to the frame rails to which the bumper is attached. The holes were designed and manufactured by the bumper manufacturer. The bumper should have been reinforced at these points by eliminating the holes and/or welding 1/4 inch to 1/2 inch steel reinforcement wedges between the frame rails and the upper and lower edges of the back side of the bumper.

B. Steel brackets should have been welded to the to the back side of the upper and lower edges of the back of the bumper.

C. The bending and tensile properties and or metal thickness of the bumper should have been increased in addition to A or B as described above.

D. Various bumper configurations such as tubular or cylinder designs should have been manufactured and tested in addition to A, B, and C. above. These bumper configurations are stronger than flat bumpers with similar metal characteristics.

E. The occupant compartment should be reinforced by increasing the bending and tensile properties and metal thickness (by .125 inch increments) in the area of the floorboard and fire wall and/or by welding or forming ribbing to the metal in this area. Safety factors of fifty or hundred percent are common in products.

2. I have observed bracket and wedge bumper reinforcements on similar vehicles. As to metal thickness - the steering components on the subject vehicle were protected by a measured .35 inch (approximately) thick steel enclosure while the bumper on this vehicle was designed to be .208 inch thick a difference of approximately .142 inch.

3. Guard rails of this type are common in road way design and vehicle encounters of the type that happened with the Oddi vehicle should be expected by the manufacturers.

4. The design changes I have described were capable of being incorporated into the design and manufacture of this truck in 1976 using basic engineering design and manufacturing techniques.

5. The design changes I have described above would not interefere with the function or intended use of the truck.

6. In my opinion the above design changes would have greatly increased bumper strength and occupant compartment protection with very little total incremental vehicle manufacturing cost.

7. It is my opinion that if the design changes described above were incorporated into the manufacturing process of the Oddi vehicle it would not have ramped on to the guard rail and would not have experienced sudden deceleration from striking the bridge abutment. This would have prevented the intrusions into the occupant compartment and the significant injury which Mr. Oddi sustained.

8. Attached hereto is a copy of Curriculum vitae giving my educational and experience background which qualify me to make the above statements.

/s/_____
John N. Noettl

STATE OF ARIZONA
County of Maricopa

Before Me, the undersinged authority, a Notary Public, in and for said County and State aforesaid, personally appeared, John N. Noettl, who being duly sworn according to law, deposes and say(s) that the allegations of fact contained in the above Affidavit are true and correct to the best of his information and belief.

Sworn and subscribed
before me this 23rd day of September, 1998.

Notary Public My Commission Expires: 3-23-01

/s/_____
Daniel Blew

APPENDIX G

DEPOSITION OF GEOFFREY J. GERMANE, Ph.D.

[September 26, 1997]

Dr. Germane - by Mr. Tershel

* * * *

[Pages 74-77]

. . . question. That would require –

MR. TERSHEL: Not in every instance, but in general I'm asking him.

MR. NERONE: I don't see how you can –

THE WITNESS: Does in general include every instance?

Q. No.

A. I would say in this particular instance the terrain adjacent to the guardrail is essentially flat until we get to the slope down to Campbells Run Road, and that is an area that you would like to keep vehicles from entering.

Q. Campbells Run Road?

A. The area leading to Campbells Run Road from the exit ramp on 79.

Q. Are you familiar with this type of guardrail?

A. Yes.

Q. Is it, in your opinion, a common type of guardrail along interstate highways?

A. Yes.

Q. Is it your opinion that this guardrail failed to do what it was designed in some way that caused this accident?

A. In this instance, no.

Q. The guardrail did not fail to do what it was designed to do?

A. Correct.

Q. Just to be more specific, the fact that the guardrail bent and bowed, that is what guardrails do; correct?

A. It's part of the energy management of this whole process.

Q. So that is a correct statement?

A. Yes.

Q. Have you done any testing regarding vehicles impacting guardrails?

A. No.

Q. Have you researched that issue?

A. Over the years I think I have.

Q. For this particular case have you?

A. I have not.

Q. Have you researched the issue of this type of truck impacting guardrails such as this?

MR. NERONE: What do you mean by researched?

MR. TERSHEL: Researched.

MR. NERONE: I'm not sure I understand. Going to the library, looking at books?

Q. Gone to the library or in any way checked into that issue.

A. Not for this case.

Q. Have you done it for other cases?

A. Over the years, as I say, I've looked at guardrail interaction that would involve various type of vehicles.

Q. This type of vehicle?

A. Yes, this type of vehicle in terms of trucks versus cars.

Q. How about this particular type of vehicle?

A. Probably not.

Q. In your experience, have you run across circumstances when the vehicle crossed over the guardrail?

MR. NERONE: I'm not sure I understand. What do you mean?

MR. TERSHEL: Crossed over, the same words that he used in his report, crossed over.

THE WITNESS: Yes.

Q. In those instances, what type of vehicle were you dealing with?

MR. NERONE: Let's step back because I don't know what we're talking about. You two may. When you say crossed over, Paul, do you mean a ramp up as Mr. Noettl described.

MR. TERSHEL: No, not yet.

THE WITNESS: I understood you to just mean the fact that it breaks the plane of the guardrail somehow.

Q. And ends up on the other side.

A. And ends up on the other side. Yes.

Q. What type of vehicle?

A. Passenger cars and trucks.

Q. Was it this type of guardrail?

A. Probably.

Q. In those cases or any cases have you run across incidents when the vehicle ramped up onto the guardrail such as this?

A. No.

Q. Have you run into any situations wherein a vehicle straddled the guardrail?

A. I don't remember any.

* * * *

APPENDIX H

DEPOSITION OF DENNIS GUENTHER, Ph.D.

[September 18, 1997]

* * * *

[Pages 86 - 93]

. . . . know, you're saying that in your opinion a manufacturer does not have to do any type of crash testing prior to putting a vehicle in the stream of commerce so to speak?

A. No. If you're making a car that falls under FMVSS, you have to do crash testing, but there's a whole range of vehicles, much like we have here, that are not required to go out and do rear-end impacts, frontal impacts, etcetera and so forth. But the knowledge you know from the society in the industry, I believe these manufacturers and engineers are applying those to the principles that go into this.

They're not sitting there putting a gas tank on the front of the vehicle or using it for a rear bumper, it's obvious they know things like that. They provide seat belts and attaching mechanisms, they know things like that. Do I feel it necessary to take this vehicle and subject it to FMVSS? No, I don't feel a need for that.

Q. I think you said there are no federal regulations requiring that; correct?

A. Correct.

Q. My question to you is from an engineering view, do you believe that you should do such tests, not from a federal requirement?

A. I understand. I'm saying no. If I was asked by whoever to come up with some designs of vehicles like this, I'm going to bring into it the knowledge that you have of what kind of seat belt attachments, where you need to do it, you want to have lights that come out, air conditioning, defogging, you want to have structural members that can absorb energy, things like this you do you bring in. I don't need to do nor do engineers today need to take these vehicles and put them into a 30 miles an hour barrier to evaluate those kinds of parameters. You can do much of that with good sound engineering from your drawing table or computer. That's all I'm saying.

Q. Are you aware of any such evaluation of the crashworthiness of this vehicle that was done by Grumman or Ford?

A. Do I know specifically, no.

Q. Did you discuss with any representatives of Grumman or Ford whether this type of activity was done?

A. Not of this vehicle.

Q. On any similar vehicles to this?

A. I have far more knowledge of the vehicles that are now delivering, our postal vehicles, both to the plant in Williamsport, PA, talk with engineers, I saw the assembly process. In that evaluation I know the kind of sound engineering that went into that. If that same methodology was applied here by Grumman, then I feel very comfortable they done what I said as far as good engineering. I will say it again. I do not need to crash this vehicle into barriers to evaluate it.

Q. Should they do any testing whatsoever with regard to occupant protection?

A. I don't know if the word is testing. I think they have to have a belt system. I think they need to evaluate the pedestal seat. Things like this I think should be done, but I don't know that you have to go out and do testing per se. Again, you can do all of that with a good analysis.

Q. You're saying that the only thing you feel that they should do are the federally required testing on seats and seat belts?

A. No. I think they do more than that. They also know that they have an extra window in there so you don't have a big blind spot. There's a lot that goes in that they are doing to produce a safe and useful vehicle.

Q. I'm talking about occupant protection in the event of an accident.

A. Have they done an evaluation? If my understanding is correct, the way I perceived what they did

relative to the postal vehicle, then they went through the evaluation process, through calculations and/or design alternatives and committee meetings as far as positioning this occupant in this vehicle to give him or her a safe environment, that did not necessitate doing a 30 miles an hour frontal barrier crash test.

Q. You keep referring to that, and I don't want it to be that specific. Should they do any testing with regard to occupant protection in the event of a crash?

MR. MCCORMICK: I think he has answered the question.

MR. TERSHEL: He has danced pretty good, but he hasn't answered that question.

MR. McCORMICK: I think he has answered the question.

MR. TERSHEL: That's fine.

THE WITNESS: I don't think you have to do any specific testing, because I can do all that by knowing the occupant space, the occupant compartment, the pedestal position, where I mount the three-point system to, etcetera and so forth, I can do all that without doing any testing, and I can bring that expertise into the table and into the board and into the design process. I'm talking they, meaning the Grumman engineers.

Q. Do you think that a vehicle manufacturer should test its vehicle to see what happens when it strikes a guardrail?

A. No. Nobody does that. I don't think anybody has to do that.

Q. Do you think that a vehicle that strikes the guardrail and ramps up onto the guardrail is a defective vehicle?

MR. NERONE: I'm going to object to the question.

THE WITNESS: The answer is no. If you want to go back, at what angle, at what speed do you drive this vehicle into what? The variables are so broad, you can't do that. So the answer is no.

Q. I'm going to be more specific for you. Do you believe that a vehicle that hits a guardrail, such as we have here, at a shallow angle, such as we have here, and then proceeds to ramp up onto the guardrail is defective in doing that?

MR. McCORMICK: He didn't say that.

MR. NERONE: Object to the form of the question.

MR. TERSHEL: I'm asking.

Q. Do you think that?

A. If a vehicle does that you're saying?

Q. Right.

A. In and of itself, no.

Q. You as an engineer, do you feel that if a vehicle has a propensity to climb up onto guardrails that it is unsafe in any way?

MR. McCORMICK: Object to the form.

MR. NERONE: I object.

MR. McCORMICK: How are you defining a propensity to ride up on a guardrail?

Q. Under foreseeable accident scenarios.

MR. McCORMICK: What is it that's happening that you're saying it's ramping?

Q. I'm just asking you based on the vehicle itself. Nothing exterior other than the guardrail and the vehicle itself, if the vehicle mounts the guardrail.

MR. McCORMICK: How does it mount the guardrail?

MR. TERSHEL: Don't ask me questions. Let me finish.

MR. McCORMICK: I'm objecting to your question and telling you what is wrong with it.

MR. TERSHEL: You go right ahead.

Q. My question to you is, and I would like you to give me your opinion, if a vehicle strikes a guardrail at a shallow angle at a foreseeable speed without any other exterior forces causing it to ramp, should that vehicle climb the guardrail?

MR. McCORMICK: I object to the form of the question.

MR. NERONE: So do I.

MR. McCORMICK: You also have not defined forseeable. You haven't given any parameters to the question. You haven't described in what manner it's ramping.

MR. TERSHEL: Your objection is noted.

THE WITNESS: I can't answer that question.

Q. You don't have foreseeable accident scenarios -- you don't believe that engineers would have foreseeable accident scenarios in designing vehicles to determine whether they have incorporated sufficient safety features?

A. Counsel, in 27 years, I have had vehicles over 100 miles an hour have an accident, and I would say that is foreseeable, but you can't design for that, that's correct.

Q. So you would say that would be foreseeable?

A. I've had it, therefore it's foreseeable.

Q. Let's say this, under normal driving conditions, under normal driving speeds, let's limit it to that then if that's your concern.

A. And what happens?

Q. Same thing.

A. I've given you a whole bunch of examples . . . .

* * * *

APPENDIX I

DEPOSITION OF JOHN N. NOETTL

[August 20, 1997]

* * * *

J. Noettl - by Mr. Nerone

[Pages 153 - 154]

A. The Society of Automotive Engineers, American Institute of Industrial Engineers, American Institute of Mechanical Engineers. I Have, in the past, belonged to the Automotive and Medical Association for a while. I've been chairman of the American National Standards Institute Technical Committee and some engineering clubs.

Q. Your current fee rate, is that $225 an hour?

A. Yes.

Q. Directing your attention to your report dated June 16, 1997, and specifically the bottom of page 1 and most of page 2, there are 11 items listed there which, I believe, you described that you relied on in forming your opinions in this report about this case; is that correct.

A. Yes, sir.

Q. Before that it says, "May opinions are based, in part, on the following"?

A. Right.

Q. What else did you rely on in forming your opinions, aside from those 11 items?

A. Experience. My academic training, my experience, research that I do almost on a continuous basis, reviewing technical literature, is all I can say.

Q. Can you point to any particular piece of literature that you specifically relied on in forming your opinions in this case?

A. No. That's why I put that, more or less, in there because, "in part," I don't know how to divorce my experience and training from the rest of it, is all I am saying.

Q. Would that sentence refer, then, to your general knowledge as an engineer:

A. Right. And experience in doing accident investigations and testing.

Q. What testing would that be that you relied on for this particular case? Would that be, again, you couldn't put your finger on any particular test, but just generally your knowledge?

A. Well, let me -- yes. I've done a lot of crash tests, for example. I've done a lot of structural testing. I've

done finite element analysis. All of that gives you some experience. While it may not be for this particular case, it's a . . .

* * * *

[Pages 157 - 159]

. . . found. Right.

Q. Because the floorboard, in your opinion, was impacted from below, that also causes you to believe that the wheel had to be on the far side –

A. Right.

Q. -- of the guardrail, just as a matter of geographic positioning?

A. Correct. I might add, on my background, it ties right into that question. I have done barrier testing. Not this type of medium barrier, but New Jersey and Michigan's barriers. I've also reviewed tests and seen tests of vehicles going into this type of barrier.

I've never seen one, and I have to think way back, but I cannot recall one where the vehicle ended up on the other side of the barrier. It did not ride up on that. In other words, the vehicle, even at a higher speed like 60 miles an hour, did not end up on the other side of the barrier. It even rolled over at times, but wasn't on the other side of the barrier.

Q. In all the prior tests that you've seen, the vehicle has never gone over?

A. Over the barrier.

Q. It's always stayed on the same side of the barrier it was on?

A. Right.

Q. What types of vehicles were being tested in those test?

A. Large vehicles. Trucks, buses, stuff like that.

Q. Who was performing these tests?

A. Different test agencies. Like I say, I did some New Jersey tests. Dynamic Science. I think we did other tests there, also. I think other test organizations did them also.

Q. Do you have the test data in your possession?

A. I may be able to get some, yes.

Q. Did you review it in reaching your opinions in this case?

A. Not all of it.

Q. Did you review some of it?

A. I didn't review the data. I looked at some films, old films.

Q. In answer to my previous question, when I asked you what you meant by, "My opinions are based in part on the following," and I asked you if there was anything else, you said just your general experience and things of that nature?

A. Right.

Q. But you also reviewed some video, films of crash tests?

A. Right.

Q. In conjunction with this case?

A. Yes, right.

Q. Could you give those to Mr. Tershel, and I would ask for a copy.

MR. TERSHEL: Okay.

Q. Can you do that?

A. Sure.

Q. I would also ask that you give to Mr. Tershel copies of any of these studies or crash tests that you're referring to now, so he can provide them to me.

A. The crash tests that I mentioned, I don't know if I have any, into barriers and that -- into moving barriers and stationary barriers. If I have them, I'll get them.

* * * *

[Page 182]

. . . like that.

Q. Is there some reason you didn't include them in your report?

A. I guess because of the tremendous amount of variables you can put in.

Q. Because there are enough facts that we're not certain of that can't be determined that the range would be so big that it wouldn't be useful?

A. Not the range is big. If I put on paper 38 miles an hour, I would have to say, I know he wasn't going more than 40 miles an hour. But I don't. I don't know if he was doing 40 or 45 or 50. I don't know that. That's the reason.

Q. I understand. That's fine. Let me ask you -- did you want to add something? You've answered my question.

A. That's going into the rail. Right.

Q. Now, have you determined what the force was inflicted on the guardrail at the time of initial impact with the truck?

A. No, I haven't. No.

Q. Have you determined what force the truck inflicted on the bridge abutment and the rail on top . . .

* * * *

[Pages 192 - 193]

. . . would achieve a strength that would far exceed anything you could expect.

Q. What would the tensile strength or the gauge of the metal have to be on both of those options?

A. The way you go through that is look up in books and you say, "Here. We got some metal here and let's try this." Certain gauge, certain strength, something that is readily available. Its not a big thing, is what I'm trying to say. You certainly would not cut holes in it right at one of the most critical points of where your major bending force is going to occur, which is at your railing.

Q. So this would be something relatively simple to look up in a book, and you could determine from the computations in some engineering book what you should be using. What would the name of the book be?

A. Any machine design book.

Q. Is that a particular book or is that a type of a book, machine design book?

A. That's a type of book.

Q. Could you give me an authority?

A. There are machine design books that give you all types of metal gauges. If you go through the design process for any of these things on a bumper, frame rails, exactly what they do -- they don't sit down. They don't do finite element analysis. They look up in books what metal thickness, what's our yield strength, what's our tensile properties of this metal, bang, bang, bang. We're going to use this.

Q. Have you done that?

A. No. I haven't done that, no.

Q. So you don't know what the thickness would have to be, what the metal gauge, what the tensile strength --

A. Right.

Q. -- what type of material you would need to use; is that correct?

A. I told you, I would use -- probably start with the same material that you have in the bumper. Take a piece of metal, turn it on its edge, put it in back of it, weld it on there for a test, see what strength you do gain out of this as

far as impact, as far as bending moments and as far as shearing.

* * * *

APPENDIX J

DEPOSITION OF DONALD EDELEN

[March 5, 1997]

* * * *

D. Edelen - by Mr. Tershel

[Pages 50 - 53]

. . . . and there's a certain amount of protection that you receive from the bumper.

Q. Protection from what?

A. From impacts, stumps, rocks, whatever you run into.

Q. Do you do any testing of the bumper to determine its strength?

A. Not that I know of, unless there may be something for pushing a load, say, of its own weight at a low speed, but I don't have an exact testing.

Q. When you were in charge of doing analyses of components, is this something that you tested, bumpers?

A. No, sir.

Q. Why not?

A. It was not a major structural item on a vehicle. It's kind of like a facade. It's a front end component on these heavy trucks. In fact, some heavy trucks you will see with the bumpers cut off on each end, and the reason being that they have a tendency to bump these bumpers and bend them around and their steering mechanisms are into their front tires and they have to get a new bumper to straighten that out.

So you will see some of the highway tractors with the edge of the bumpers cut off. The only thing that is in front then is just a zone use usually around the bottom of the radiator or heater, coolers, things like that.

Q. Do you know what this bumper was made out of?

A. Steel.

Q. Do you know the thickness?

A. No, sir.

Q. How can you determine that?

A. I recalled it was steel when I saw it. Is that what you're asking me, or how can I determine its thickness?

Q. I was asking you both of those questions. I know you examined this one, but to determine whether it's the same one that you designed on that type of vehicle.

A. No. sir, I did not take that into consideration. I do know it was steel, but I don't know what the thickness was.

Q. Is there a way to determine that information from your design drawings?

A. These drawings, I can't. I would have to see if it's available to me.

MR. TERSHEL: I would ask that you would do that.

Q. Were you aware that when this truck was ultimately put to use there was a system on it that would prevent the load from coming forward into the passenger compartment?

A. No. We had nothing to do with the passenger compartment, so I don't know anything about that.

Q. Were you aware that that system would not permit the truck to function if it was not locked down?

A. No, sir, I'm not aware of that.

Q. Would the people at Ford have been?

A. No, sir.

Q. Did you do any crash testing with this vehicle?

A. No.

Q. Did you do any impact tests on it?

A. I don't know if there's any impact testing but to my knowledge there weren't any impact tests, no.

Q. Are you aware what an engine deflection plate is?

A. No.

Q. Have you ever designed components onto chassis for trucks of this or similar type that would protect the driver any other occupants from intrusion by outside elements in the event of an accident?

MR. NERONE: Do you mean just when the was designing the chassis?

MR. TERSHEL: Yes.

THE WITNESS: No. This type of a truck sits up very high. By outside elements are you talking about --

Q. Well, you gave us examples of things that trucks may hit, I think you said like a rock or something of that nature. Have you designed anything in the event of an accident of that type that would prevent that rock or whatever other item you would refer to from coming into the occupant compartment?

A. Those items are normally in a lower zone which would damage the under carriage or the steering . . . .

* * * *

APPENDIX K

DEPOSITION OF DAVID WHITE

[February 18, 1997]

* * * *

D. White - by Mr. Tershel

[Pages 67 - 68]

Q. In other words, you tested, it didn't pass, you changed it so it would.

A. I don't recall that.

Q. Did you perform or did your company perform crash tests on the completed vehicle?

A. This completed vehicle?

Q. Yes.

A. No.

Q. Did you perform crash tests on other body designs that you applied to this particular vehicle?

A. No.

Q. Did you ever perform crash tests on body designs in which you used this type of metal and the gauge of metal?

A. In which location, everything we've talked about?

Q. Crash tests using the metal that you used on this particular vehicle to determine its crashworthiness.

A. No.

Q. Did you perform any impact tests on any portion of this body?

A. No.

Q. Did you perform any impact tests on any portion of a body in which you applied the results to this particular vehicle?

A. No.

Q. Did you perform any impact tests on any portion of a body of a vehicle that you considered similar to this vehicle?

A. No.

Q. Did you or your company perform any finite element analyses, computer simulation, to analyze the strength of the body structure of this particular body?

A. No.

Q. Any part of the body structure, did you use those type of tests?

A. No.

Q. Would you agree that a thicker metal on the floorboard would add protection from intrusion by the chassis components or other objects?

MR. McCORMICK: I object to that question. You're asking for an opinion on this. He is not here to give opinions.

Q. In your design, when you made your design, ...

* * * *

[Page 99]

. . . . forces applied to them during normal operating conditions. Do you recall that?

A. Correct.

Q. When you say normal operating conditions, do you include accidents?

A. Yes.

Q. So the floorboards are made of an appropriate gauge of metal to withstand the forces applied to them during accidents?

A. Yes.

Q. I believe you stated you have no testing to that conclusion?

A. Correct.

Q. Could you tell me the basis for which you come to your statement that it's adequate gauge, the metal is adequate gauge?

A. The experience of all the trucks that would have been produced before then. We had not seen any kind of failures that would indicate it was not adequate.

Q. Do you have some sort of record keeping of that?

A. No.

* * * *

APPENDIX L

Expert Report of John Noettl
Vehicle Support Systems, Inc.

[Dated December 4, 1997]

Mr. Paul A. Tershel
Tershel & Associates
55 Main Street
Washington, PA 15301

Re: Report on Oddi Bread Truck Accident

Dear Mr. Tershel:

Since my preliminary report I have reviewed the deposition of Mr. Donald Edelen. I am amending my preliminary report dated June 16, 1997 (attached) by adding the following paragraphs.

It is my opinion that Ford Motor Corporation should have warned Grummen Allied Industries, Inc. of the fact that the front bumper on their chassis is for decorative trim only and will not offer protection to the body and occupant in a collision. As a result of the design of the chassis and bumper, the front wheels of the vehicle become exposed in foreseeable accident situations. Ford should have specifically warned that the bumper was extremely weak due to the fact it had no backing plate or brackets for reinforcement and because it had

holes in the bumper placed immediately adjacent to the outside where the bumper mounted to the chassis.

It is also my opinion that Grummen Allied Industries Inc. should have informed their customers of the above warning and added a specific warning concerning the lack of occupant protection provided by the Ford chassis, bumper, and Olson's Body in the event of a collision. This warning should have been designed according to warning label guides and placed in conspicuous locations in the occupant compartment of the vehicle.

Neither Ford nor Grummen conducted any testing that involved the vehicle impacting with guardrails. Neither Ford nor Grummen incorporated any design(s) into the chassis or body of the vehicle that would prevent or reduce the likelihood of the vehicle going over a guardrail in the event of an impact with a guardrail. Due to the vehicle's height, weight, and design the vehicle has a propensity to ramp up onto the guardrail in foreseeable collision situations. As a result, this vehicle's design is defective from a safety standpoint. Specific warnings of the safety defect should have been given to the user as stated above. The design defect caused or contributed to the cause of the accident and to Mr. Oddi's injuries.

If more information is made available to me concerning this vehicle I will review it along with my opinions stated above.

Sincerely,

/s/
John N. Noettl

APPENDIX M

Expert Report of John Noettl
Vehicle Support Systems, Inc.

[Dated June 16, 1997]

Mr. Paul A. Tershel
Tershel & Associates
55 Main Street
Washington, PA 15301

Re: Oddi - Bread Truck Accident

Dear Mr. Tershel:

You asked me to review the facts of the referenced accident and to give any opinions on whether or not design defects in the Ford chassis or Grumman Olson body caused or contributed to the cause of the accident and the resulting injuries to the driver, Mr. Oddi.

This accident happened on June 21, 1993 at approximately 1:20 p. m. when Mr. Oddi was driving a Step Van consisting of a chassis manufactured by Ford Motor Company as an incomplete vehicle and a body Manufactured by Olson Bodies, Inc. (now, Grumman Allied Industries, Inc.) and installed on the chassis as a completed vehicle. As the vehicle exited SR. 79 Northbound lanes on exit 14 it left the paved portion of the exit ramp hit a directional sign and struck a guard rail on the West side of the exit ramp. The

vehicle then rode up on the guard rail with the left front tire going over the top of the rail. The Step Van struck the concrete barrier at the end of the guard rail as it rolled completely over the rail and down the adjacent embankment. Mr. Oddi was ejected during the accident event.

My opinions are based in part on the following:

1. A review of the Pennsylvania Police Accident Report.

2. A review of photographs of the accident scene taken shortly after the accident.

3. A review of videos of the accident scene taken shortly after the accident.

4. A review of the deposition of David Oddi.

5. A review of a statement and deposition of Jeffrey J. Herman.

6. A review of a statement and deposition of Junior Russell Taylor.

7. A review of a statement and deposition of Karen Sue Taylor.

8. A review of a statement and deposition of Christina Jirak O'Donnell.

9. A review of medical records on David Oddi.

10. A visit to the scene on November 21, 1996.

11. An examination of an exemplar vehicle on November 21, 1996 and an examination of the vehicle involved in the accident on March 27, 1997.

It is my opinion that the Step Van rode upon the guard rail because of the failure of the left side of the front bumper. This portion of the bumper was deformed back and inward allowing the left front wheel to ramp up and over the guard rail. Had the bumper not significantly deformed back and inward the vehicle would have been deflected by the guard rail.

It is also my opinion that the floor board allowed intrusion by the guard rail and possibly the concrete barrier into the occupant compartment in area near the brake pedal and where the driver's feet and legs would be located. This intrusion was a direct cause of the injuries to Mr. Oddi.

Had the bumper and the floor board been properly structurally designed the vehicle would not have gone over the guard rail and the occupant compartment would not have been intruded by the guard rail and concrete barrier.

This is a preliminary report and as more information is made available to me I will review it along with my opinions stated above.

Sincerely,

/s/
John N. Noettl

APPENDIX N

John Noettl's Curriculum Vitae
Vehicle Support Systems, Inc.

John N. Noettl CV & VSS background Information.
(Beginning with current activities.)

MS, 1965, Washington University
Major - Industrial Engineering

BS, 1959, Washington University
Industrial Engineering

Mr. Noettl has been president of his own industrial systems and engineering consulting company, Vehicle Support Systems, Inc. for over ten years. The major activities of the company are; the design and installation of fleet management systems and industrial systems, the design and performance of testing and statistical studies concerning motor vehicles and industrial equipment including vehicle handling tests, structural test, and crash tests. The company studies' man and machine relationships in vehicle and machine use, and performs accident investigation and reconstruction for research and litigation. The company has produced the vehicle repair cost and preventive maintenance data for "THE CAR BOOK" for over fourteen years and similar information for "THE TRUCK & VAN BOOK" for three years.

Mr. Noettl and his associates have performed accident investigations, reconstructions, testing and research on hundreds of accidents involving many different types of

passenger vehicles, trucks, tractor trailers and industrial equipment. Mr. Noettl's research and testing on vehicle safety and vehicle repair and operating costs have been reported on all national networks and in more than 40 newspapers including the New York Times, The L. A. Times, The St. Louis Post Dispatch, and The Wall Street Journal.

(Excerpt from Dynamic Science literature) "Mr. Noettl adds to Dynamic Science, twenty years of professional experience highlighted by two Presidential appointments to the National Motor Vehicle Safety Advisory Council, fifteen congressional testimonies, and his chairmanship of the Technical Committee of the American National Standards Institute."

Prior to joining Dynamic Science, Mr. Noettl was founder and president of United Systems Testing, Inc., a company providing mobile vehicle diagnostic and repair services in the St. Louis, Missouri area. Under a National Highway Traffic Safety Administration contract DOT-HS-9-6131, Mr. Noettl published a report entitled the DESIGN, IMPLEMENTATION, AND OPERATION OF A MOBILE DIAGNOSTIC INSPECTION SYSTEM IN THE METROPOLITAN ST. LOUIS AREA. Mr. Noettl was also a consultant to Washington University Computer Sciences Department where he designed a master's curriculum on Industrial Systems.

Mr. Noettl and his staff are major contributors to "THE CAR BOOK," a consumer oriented publication that has millions of copies in circulation. Mr. Noettl designed and installed the book's initial vehicle repair and preventive

maintenance costs' data acquisition system for the government and has continued his work for the private authors and publishers of the book.

Mr. Noettl was Director of Services for the Automobile Club of Missouri for eleven years. He directed 400 employees responsible for Emergency Road Services, Diagnostic Inspection Services, and the Club's Membership and World Wide Travel Services. He established a Technical Services Department for Club and directed and coordinated all technical contracts with the government and other organizations, including:

A four-year contract with the National Highway Traffic Safety Administration on motor vehicle component defect investigations.

Vehicle repair surveys for the National Highway Traffic Safety Administration and congressional committees.

A four-year Environmental Protection Agency contract for surveillance of emissions' inspections in Los Angeles, St. Louis, Philadelphia, Detroit, and Atlanta.

Design and implementation of a procedure for monitoring carbon monoxide inside vehicles. This procedure resulted in a testing program involving a large number of vehicle makes and models for the Senate Commerce Committee.

Mr. Noettl also directed the design and installation of special application computer programs for the Automobile Club's membership and travel services, and designed and installed computerized management information systems. He also established a bicycling safe riding and travel program for the Club and designed and directed the manufacture of special trailer vehicles for the transportation of bicycles.

Mr. Noettl was a contract administrator for four years and an Industrial Engineer for over two years with McDonnell Aircraft Company. As a contract administrator, he supervised thirty engineers in designing configuration management, PERT, production planning engineering change proposal, and vendor supply tracking systems. He was responsible for negotiating contracts with NASA, the U. S. Air Force and the U. S. Army and the implementation of the contract requirements. As an Industrial Engineer he was responsible for production procedures, standards, and workplace design for certain F-4 aircraft subassembly operations. He also designed and applied computer simulation programs for scheduling aircraft flight testing.

For three years Mr. Noettl instructed part time in the University College of Washington University where he taught Engineering Economy, Production Controls and Statistical Applications to Manufacturing Processes. He also taught a seminar, course on Engineering Economy for the Professional Engineering examinations.

Mr. Noettl was also a senior Industrial Engineer with Carter Carburetor responsible for production procedures, standards, and workplace design. He designed and installed incentive systems for direct and indirect labor.

John Noettl's Curriculum Vitae

Mr. Noettl has taken many specialized industrial courses throughout his professional career and has certificates in accident reconstruction. He has held memberships in the ASME, AIIE, SAE, AMA, AAAM, ANSI and Washington University Engineering Club. His publications include INFORMATION CONCEPTS IN NETWORK PLANNING, Journal of Industrial Engineering, July 1967; AUTOMOTIVE INSPECTION DATA FOR ECONOMY AND SAFETY; an article in the NALI Journal THE LEGAL INVESTIGATOR on Vehicle Restructuring, August 1983; SAE oral presentations on Automotive Diagnostic Inspection Systems and Vehicle Automatic Occupant Protection Systems; a written and oral presentation to the Conference on Basic Research Directions For Advanced Automotive Technology, February 1979.

APPENDIX O

Expert Report of Leon Kazarian

[Dated June 18, 1997]

Leon Kazarian, Dr. Ing.
674 McBee Road
Bellbrook, OH 45305
937-426-3004
fax 937-426-4281

June 18, 1997

FAX 412-228-6482

Attorney Paul A. Tershel
Melenyzer & Tershel
55 South Main Street
Washington, PA 15301

RE: David Oddi
File No.: 93-0180

Dear Mr. Tershel:

This biomechanical report addresses two issues:

1. Did Mr. Oddi sustain his injuries while he was in the driver's seat or at the time he was ejected from his vehicle?

2. How did his injuries occur?

1.0 BACKGROUND

On 6/21/93 David Oddi was operating a 1976 bread truck. For whatever reason, the vehicle departed the roadway, impacted a guardrail with its left front wheel, mounted the guardrail, with its left front wheel and struck a concrete bridge barrier. The bridge barrier penetrated the driver's compartment. Mr. Oddi sustained massive injuries

2.0 MATERIALS REVIEWED

Photographs of the accident scene, which include the truck wreckage, the guardrail and barrier as well as the hillside;

The accident report which includes a diagram of the position of both the truck and the barrier;

Supplemental police accident reports including the witness' statements;

Report of the medical evacuation unit that removed Mr. Oddi to Presbyterian University Hospital;

Presbyterian University Hospital Trauma Unit report;

Admission report and continuing records including operative reports from Presbyterian University Hospital;

Radiology reports concerning right knees and left femur dated 6/21/93 through 6/25/93;

Surgery pathology report dated 6/21/93;

Operative report dated 6/21/93 left and right leg;

Operative report dated 6/21/93 left forearm;

Operative reports dated 6/28/93, 7/1/93 and 7/4/93 concerning left arm and

Photographs of plaintiff's amputated legs.

3.0 THE INJURIES

left forearm
- avulsion injury to left antecubital fossa on the left forearm; trauma to most of the forearm muscle

right leg
- severe crush / exsanguination injuries
- Grade 3 open right tibia and knee fractures with injuries to the condyles of the distal femur
- avulsion muscle bellies of the posterior superficial, deep and anterior compartment of the right leg
- avulsion of peroneal nerve right leg

left leg
- severe crush / exsanguination injuries
- Grade 3 open left tibial plateau and left femur fracture
- open left knee, Grade C with floating knee and arterial disruption.

chest
- diffuse opacity overlying the right lung, diffuse right lung contusion
- bilateral pulmonary contusions

other

- eyebrow lacerations
  left eyebrow 2 cm laceration
- large laceration left neck
- left shoulder abrasion
- right shoulder abrasion
- right chest abrasion
- right hand abrasion

4.0 BIOMECHANICAL ANALYSIS AND OPINIONS

David Oddi struck a guardrail mounted and continued to ride the guardrail to the point when the front end of the vehicle impacted the end of the concrete bridge barrier.

On impact, the end of the bridge pierced and penetrated the driver's occupant compartment impaling, cutting and crushing Mr. Oddi's extremities.

David Oddi was found outside the vehicle on the grassy slope next to the bridge.

THE QUESTIONS

1. Did Mr. Oddi sustain his injuries while he was in the driver's seat or at the time he was ejected from his vehicle?

Mr. Oddi sustained his primary injuries at the time he was in the driver's seated position.

2. How did his injuries occur?

Mr. Oddi's injuries occurred as a result of the bridge piercing, penetrating and crushing his extremities while he was in the driver's compartment.

This is a preliminary report. The foregoing statements reflect my preliminary thought regarding this incident.

Sincerely,

/s/

APPENDIX P

CURRICULUM VITAE
LEON KAZARIAN

[Fold-out]

CURRICULUM VITAE

December 19

LEON KAZARIAN

Biomechanical Engineering Consultant
674 McBee Road
Bellbrook, Ohio 45305
513-426-3004
fax 513-426-4281

EDUCATIONAL BACKGROUND

Teknologic Doktor (Dr. Ing.), Karolinska Institute, Stockholm, Sweden, 1973.

Doctoral Dissertation: "Dynamic Response Characteristics of the Human Vertebral Column - An Experimental Study of Human Autopsy Specimens," Advisor - Professor Carl Hirsch.

B.Sc. Aeronautical and Astronautical Engineering - Northrop Institute of Technology, Inglewood, California, 1966.

POSITIONS HELD

1966-1967: Biomechanical Engineer, Systems Research Laboratories, Dayton, Ohio 45385

1967-1991: U.S. Air Force, Air Force Systems Command - Human Systems Division, Armstrong Aerospace Medical Research Laboratory, Wright Patterson Air Force Base, Dayton, Ohio 45433

1991-present: Self employed

Biomechanical Engineering Consultant

ACADEMIC APPOINTMENTS

Associate Clinical Professor
Wright State University
School of Medicine
Faculty of Community Medicine
1980 - Present.

Adjunct Associate Professor
Department of Anatomy
School of Veterinary Medicine
Purdue University
1983 - 1996

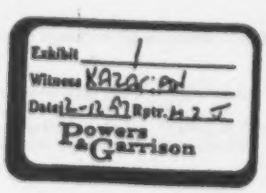
Adjunct Associate Professor
Wright State University
Department of Biomedical Engineering
College of Engineering and Computer Science
1988 - 1996

SPECIAL HONORS AND AWARDS

George-Schmorl Preis. Gesellschaft fur Wirbelsaulenforschung. Bad Homburg, Germany, 1973 - For Basic Research in Spinal Column Pathology and Spinal Column Mechanics.

Eric Liljenerantz Award. Presented by the Aerospace Medical Association in 1979 for Basic Research in the Problems of Acceleration and Altitude.

Volvo Award. Presented by the International Society for the Study of the Lumbar Spine in June of 1985 for Low Back Research, "Poroelastic Dynamic Structural Models of Rhesus Spinal Motion Segments."



114

BEST AVAILABLE COPY

PAPERS AND PRESENTATIONS

Smith, S. and Kazarian, L.E., "Comparative Dynamic Response Characteristics of Two Primate Species Exposed to Vibratory Stress," . presented at the 11th Annual International Conference of IEEE, Engineering in Medicine and Biology Society, Seattle, Washington, November 9-12, 1989.

Girten, B., Oloff, C., Plato, P., Eveland, E., Merola, A.J. and Kazarian, L.E., "Skeletal Muscle Antioxidant Enzyme Levels in Rats after Simulated Weightlessness, Exercise and Dobutamine," abstract and poster, Federation Proceedings, 31(4), 1988. short paper, The Physiologist, 1989.

Bloomfield, S., Girten, B., Weisbrode, S., Eveland, E. and Kazarian, L.E., "Modifications of Bone Atrophy Seen With Hindlimb Suspension by Exercise and Dobutamine," abstract, Federation Proceedings, 31(4): A32, 1988. short paper, The Physiologist, 1989.

Smith, S.D. and Kazarian, L.E., "The Effects of Acceleration on Whole Body Vibration Response in the Primate Model," abstract and short paper, presented at the 13th Annual Meeting of the American Society of Biomechanics, University of Vermont, Burlington, August 1989.

Girten, B., Smith, S., Bloomfield, S., Merola, A.J. and Kazarian, L.E., "Ventricular Myosin Isozyme and Electrocardiographic Alterations after Exercise and Dobutamine Interventions for Hypokinesis/Hypodynamic Deconditioning," presented at Aviation, Space and Environmental Medicine, May 1989.

Acharya, K., Harris, G., Riedel, S., and Kazarian, L.E., "Force Magnitude and Spectral Frequency Content of Heel Strike During Gait," IEEE/EMBS Biomechanics Track, April 1989.

Levin, L., Andersen, H., Kazarian, L.E., and Hayes, P., "Data Analysis in Cervical Trauma," presented at the Aerospace Medical Panel Symposia on Neck Injury in Advanced Military Aircraft Environments, Munich, Germany, April 24-25, 1989, .

Smith, S.D. and Kazarian, L.E., "The Effects of Prolonged Vibration Exposure on Whole Body Impedance Characteristics in the Seated Primate Model," presented at the International Symposium on Vibration at Work, Vienna, Austria, April 19-21, 1989.

Buckwalter, J.A., Smith, K.C., Kazarian, L.E., Rosenberg, L.C. and Ungar, R., "Short Communication - Articular Cartilage and Intervertebral Disk: Proteoglycans Differ in Structure - An Electron Microscopic Study," Journal of Orthopaedic Research, Vol. 7, No. 1, 1989.

Harris, G.F., Reidel, S.A, Weber, R.C., Kazarian, L.E., "Validation and Preliminary Study of the AAMRL/BBD Portable Force Dosimeter," presented at the Aerospace Industries/Test Measurement Symposium in Albuquerque, New Mexico, May 2-5, 1988.

Montgomery, L., Guisafo, R., Kelly-Gamuccio, J., Montogomery, R., and Kazarian, L.E., "Electroencephalographic (EEG) and Rheoencephalographic (REG) Measures of Cerebral Function," presented at the 59th Annual Scientific Meeting of the Aerospace Medical Association, New Orleans, Louisiana, 1988.

Girten, B., Montgomery, L., Oloff, C.O. and Kazarian L.E., "Segmental Volume Changes That Occur in Nonhuman Primates During Short Term Head Up (HUT) and Head Down (HDT) Tilt," abstract and poster presentations at the Aviation, Space and Environmental Medicine, 59(5), 481, 1988.

Eveland, E., Swenson, K., Kazarian, L.E., Smith, S.D., Oloff, C.O., Smith, K.C. and Souder, M., "Changes in Cortical Bone of the Proximal Tibia After Low Frequency Vibration," presented at the 59th Annual Scientific Meeting of the Aerospace Medical Association, New Orleans, Louisiana, 1988

Smith, S.D. and Kazarian, L.E., "Impedance Response Characteristics Following Prolonged Vibration Exposure in a Primate Model," presented at the 59th Annual Scientific Meeting of the Aerospace Medical Association, New Orleans, Louisiana, 1988.

Kazarian, L.E., Pepe, M. and Wolf, J., "Spinal Injury Mechanics," presented at the 1988 American Academy of Forensic Sciences Meeting, Philadelphia, Pennsylvania, February 18, 1988.

Wolk, J., Pepe, M. and Kazarian, L.E., "The Application of Computer Graphic Simulations to Cervical Fractures," presented at the 1988 American Academy of Forensic Sciences Meeting, Philadelphia, Pennsylvania, February 18, 1988.

Greenidge, N.C. and Kazarian, L.E., "Microfracture Patterns in Lumbar Vertebrae of Macaque Mulatta," presented at the Aerospace Medical Association Meeting, Las Vegas, Nevada, May 10-14, 1987.

France, E.P., Paulos, L.E., Abbott, P.J., Roberts, P.F., Muhic, L.A., LeMaster, J.H. and Kazarian, L.E., "Failure Characteristics of the Medial Collateral Ligament of the Knee: Effects of High Strain Rate," presented at the Aerospace Medical Association Meeting, Las Vegas, Nevada, May 10-14, 1987.

Girten, B., Oloff, C., Kazarian, L.E., Bloomfield, S., Smith, B., Hemlin, R., "Effects of Dobutamine of Suspension Hypokinesia/Hypodynamia Deconditioning in Rats," presented at the Aerospace Medical Association Meeting, 58(5), 401, Las Vegas, Nevada, May 10-14, 1987.

Myers, J., Swenson, K., Kazarian, L.E., Souder, M., Smith, K., Muhic, L., Cooper, R., Smith, S. and Roberts, P., "Whole-Body Vibration Effects on Calcium Metabolism: A Potential Weightlessness Countermeasure," Aviation, Space and Environmental Medicine, (Abstract), 58(5), May 1987, presented at the Aerospace Medical Association Meeting, Las Vegas, Nevada, May 10-14, 1987

Eveland, E., Smith, K., Oloff, C., Swenson, K., Souder, M. and Kazarian, L.E., "A Comparison of Bone Labeling Compounds: Tetracycline, Calcein, Xylenol Orange and CDAF," presented at the Aerospace Medical Association Meeting, Las Vegas, Nevada, May 10-14, 1987.

Swenson, K., Kazarian, L.E., Myers, J., Smith, J., Souder, M., "The Effects of Low Frequency Vibration on Vertebral Strength," Aviation, Space and Environmental Medicine, (Abstract), 58(5), May 1987, presented at the Aerospace Medical Association Meeting, Las Vegas, Nevada, May 10-14, 1987.

Smith, K.C., Oloff, C.M., and Kazarian, L.E., "Effects of 14 Day Restraint on Bone Dynamics in the Juvenile Rhesus Monkey," presented at the Aerospace Medical Association Meeting, Las Vegas, Nevada, May 10-14, 1987.

Kazarian, L.E., "A Spectrum of Spinal Fractures," presented at the Society of Air Force Clinical Surgeons, Dayton, Ohio, April 27 - May 1, 1986.

Van Sickle, D.C. and Kazarian, L.E., "Subhuman Primate Model of Spondylosis," Scand. J. Rheumatol. 60 (Suppl): 45, 1986 (ABSTR. 136).

Eurell, J.C. and Kazarian, L.E., "The Vertebral Cartilaginous End Plate of the Preadult Rhesus Monkey (Macaca Mulatta): A Correlative Scanning Electron and Light Microscopic Study," Spine, Vol. 11, No. 5, 1986.
Simmons, D.J., Parvin, C., Smith, K.C., France, P. and Kazarian, L.E., "Effect of Rotopositioning on the Growth and Maturation of Mandibular Bone in Immobilized Rhesus Monkeys," Aviation, Space and Environmental Medicine, February 1986.

115

Eveland, E., Swenson, K., Kazarian, L.E., Smith, S.D., Oloff, C.O., Smith, K.C. and Souder, M., "Changes in Cortical Bone of the Proximal Tibia After Low Frequency Vibration," presented at the 59th Annual Scientific Meeting of the Aerospace Medical Association, New Orleans, Louisiana, 1988.

Smith, S.D. and Kazarian, L.E., "Impedance Response Characteristics Following Prolonged Vibration Exposure in a Primate Model," presented at the 59th Annual Scientific Meeting of the Aerospace Medical Association, New Orleans, Louisiana, 1988.

Kazarian, L.E., Pepe, M. and Wolf, J., "Spinal Injury Mechanics," presented at the 1988 American Academy of Forensic Sciences Meeting, Philadelphia, Pennsylvania, February 18, 1988.

Wolk, J., Pepe, M. and Kazarian, L.E., "The Application of Computer Graphic Simulations to Cervical Fractures," presented at the 1988 American Academy of Forensic Sciences Meeting, Philadelphia, Pennsylvania, February 18, 1988.

Greenidge, N.C. and Kazarian, L.E., "Microfracture Patterns in Lumbar Vertebrae of Macaque Mulatta," presented at the Aerospace Medical Association Meeting, Las Vegas, Nevada, May 10-14, 1987.

France, E.P., Paulos, L.E., Abbott, P.J., Roberts, P.F., Muhic, L.A., LeMaster, J.H. and Kazarian, L.E., "Failure Characteristics of the Medial Collateral Ligament of the Knee: Effects of High Strain Rate," presented at the Aerospace Medical Association Meeting, Las Vegas, Nevada, May 10-14, 1987.

Girten, B., Oloff, C., Kazarian, L.E., Bloomfield, S., Smith, B., Hamlin, R., "Effects of Dobutamine of Suspension Hypokinesia/Hypodynamia Deconditioning in Rats," presented at the Aerospace Medical Association Meeting 58(5) 501., Las Vegas, Nevada, May 10-14, 1987.

Myers, J., Swenson, K., Kazarian, L.E., Souder, M., Smith, K., Muhic, L., Cooper, R., Smith, S. and Roberts, P., "Whole-Body Vibration Effects on Calcium Metabolism: A Potential Weightlessness Countermeasure," Aviation, Space and Environmental Medicine, (Abstract), 58(5), May 1987, pres... at the Aerospace Medical Association Meeting, Las Vegas, Nevada, May 10-14, 1987

Eveland, E., Smith, K., Oloff, C., Swenson, K., Souder, M. and Kazarian, L.E., "A Comparison of Bone Labeling Compounds: Tetracycline, Calcein, Xylenol Orange and CDAF," presented at the Aerospace Medical Association Meeting, Las Vegas, Nevada, May 10-14, 1987.

Swenson, K., Kazarian, L.E., Myers, J., Smith, J., Souder, M., "The Effects of Low Frequency Vibration on Vertebral Strength," Aviation, Space and Environmental Medicine, (Abstract), 58(5), May 1987, presented at the Aerospace Medical Association Meeting, Las Vegas, Nevada, May 10-14, 1987

Smith, K.C., Oloff, C.M., and Kazarian, L.E., "Effects of 14 Day Restraint on Bone Dynamics in the Juvenile Rhesus Monkey," presented at the Aerospace Medical Association Meeting, Las Vegas, Nevada, May 10-14, 1987.

Kazarian, L.E., "A Spectrum of Spinal Fractures," presented at the Society of Air Force Clinical Surgeons, Dayton, Ohio, April 27 - May 1, 1986.

Van Sickle, D.C. and Kazarian, L.E., "Subhuman Primate Model of Spondylosis," Scand. J. Rheumatol. 60 (Suppl): 45, 1986 (ABSTR. 136).

Eurell, J.C. and Kazarian, L.E., "The Vertebral Cartilaginous End Plate of the Preadult Rhesus Monkey (Macaca Mulatta): A Correlative Scanning Electron and Light Microscopic Study," Spine, Vol. 11, No. 5, 1986.

Simmons, D.J., Parvin, C., Smith, K.C., France, P. and Kazarian, L.E., "Effect of Rotopositioning on the Growth and Maturation of Mandibular Bone in Immobilized Rhesus Monkeys," Aviation, Space and Environmental Medicine, February 1986.

Simon, B.R., Wu, S.S., Carlton, M.W., Kazarian L.E., France, E.P., LeMastser, J.H. and Zienkiewicz, O.C., "Poroelastic Dynamic Structural Models of Rhesus Spinal Motion Segments," 1985 Volvo Award Paper in Biomechanics, Spine Vol. 40, 1985.

Eurell, J.C. and Kazarian, L.E., "The Structure and Function of the Cartilaginous End Plate of the Preadult Rhesus Monkey Vertebra," presented at the American and Canadian Associations of Anatomists 1985 Meeting, Toronto, Canada, June 1985.

Kazarian, L.E., "Vertebral Injury in Ejection Equipped USAF Aircraft," presented at the Aerospace Physiology Tutorial at the Aerospace Medical Association Meeting, San Antonio, Texas, May 1985.

Smith, S.D. and Kazarian, L.E., "The Effect of Gender on Vertebral Body Strength Characteristics in the Squirrel Monkey," Aviation, Space and Environmental Medicine, (abstract), 56(5), p.486, May 1985, presented at the Aerospace Medical Association Meeting, San Antonio, Texas, May 12-16, 1985.

Smith, K.C., Kazarian, L.E., Pal, S., Tang, L. Choi, H., Johnson, T. and Rosenberg, L., "Biochemical Characterization of the Normal Baboon Intervertebral Disc," presented at the Aerospace Medical Association Meeting, San Antonio, Texas, May 12-16, 1985.

Arcan, M., Daniels, I.M., Toth, D.N. and Kazarian, L.E., "Photoplastic Sheets - A New Method of Making Biomechanical Contact Measurements," presented at the Aerospace Medical Association Meeting, San Antonio, Texas, May 12-16, 1985.

Simon, B.R., Wu, S.S., Carlton, M.W., Kazarian, L.E., France, E.P., Evans, J.H. and Zienkiewicz, O.C., "Poroelastic Dynamic Structural Models of Rhesus Spinal Motion Segments," Volvo Award Paper presentation at the 12th Annual Meeting of the International Society for the Study of the Lumbar Spine, Sydney, Australia, April 1985.

Smith, S., Kazarian, L.E. and von Gierke, H., "Mechanical Vibration and Bone Strength: A Review," presented at the Acoustical Society of America Meeting, Austin, Texas, April 1985.

Simon, B.R., Carlton, J., Evans, J. and Kazarian, L.E., "Structural Models for Human Spinal Motion Segments Based on Poroelastic View of the Intervertebral Disc," published in the Journal of Biomechanical Engineering, 1985.

Simon, B.R., Wu, J.S., France, E.P., Kazarian, L.E. and Evans, J.H., "Transient Dynamic Analyses of Rhesus Spinal Motion Segments Using Poroelastic Constitutive Models," presented at the American Society of Mechanical Engineers, New Orleans, Louisiana, December 1984.

Simon, B.R., Wu, J.S., Evans, J. H. and Kazarian, L.E., "Poroelastic Structural Models for Human Spinal Motion Segments," presented at the American Society of Biomechanics Meeting, Tucson, Arizona, October 1984.

Eurell, J.A. and Kazarian, L.E., "Scanning Electron Microscopy of the Preadult Rhesus Monkey Vertebral Column," presented at the International Society for the Study of the Lumbar Spinal Meeting, Montreal, Canada, June 3-7, 1984.

Eurell, J.A., Kazarian, L.E. and Van Sickle, D.C., " The Microscopy of the Effects of +Gz Impact of Baboon Spines," presented at the 30th Annual Orthopaedic Society, Atlanta, Georgia, February 7-9, 1984.

Burns, M.L., Kaleps, I. and K...rian, L.E., "Analysis of Compressive Creep Behavior of the Vertebral Unit Subjected to Uniform Axial Loading Using Exact Parametric Solution Equations of Kelvin-solid Models. Part II Rhesus Monkey Intervertebral Joints," published in the Journal of Biomechanics, February 1983.

Burns, M.L., Kaleps, I. and Kazarian, L.E., "Analysis of Compressive Creep Behavior of the Vertebral Unit Subjected to Uniform Axial Load Using Exact Parametric Solutions of Kelvin-solid Models. Part I Human Intervertebral Joints," published in the Journal of Biomechanics, January 1983.

Eurell, J.A. and Kazarian, L.E., "Quantitative Histochemistry of Rat Lumbar Vertebrae Following Space Flight," published in Anatomica Clinica, January 1983.

France, E.P., Oloff, C.M. and Kazarian, L.E., "Bone Mineral Analysis of Rat Vertebrae Following Space Flight COSMOS - 1129," presented at the American Physiological Society in October 1982, also published as AFAMRL-TR-83-055.

Kazarian, L.E., Cann, C., Parfitt, M., Simmons, D. and Morey-Holton, E., "A 14-Day Ground Based, Hypokinesia Study in the Non-Human Primates - A Compilation of Results", NASA-T.M.-81268-NASA-ARC-Moffett Field, California, 94035.

Smith-Lagnese, D. and Kazarian, L.E., "The Determination and Analysis of Compressive Strength Characteristics of Squirrel Monkey Vertebral Bodies," presented at the Society of Biomechanics, Seattle, Washington, October 1982.

Eurell, J.A. and Kazarian, L.E., "The Scanning Electron Microscopy of the Vertebral Column from Baboons Following Vertical Impaction," presented at the International Society for the Study of the Lumbar Spine, Toronto, Canada, June 6-10, Spine, Vol 7. No. 2, May/June 1982.

Kazarian, L.E. and Oloff, C., "Reversibility of Disuse Osteoporosis," presented at the Committee on Space Research 24th COSPAR Meeting, Ottawa, Canada, May 1982.

Van Sickle, D.C. and Kazarian, L.E., "Chronic Effects of +Gz Impact on the Baboon Spine," NATO-AGARD CP-322-Koln, Germany, March 1982.

Kazarian, L.E., Van Sickle, D.C., Oloff, C.M. and Smith, K.C., "The Baboon as a Model of Spondylosis Deformans Traumatica," presented at the Review of Air Force sponsored Basic Research in Environmental Physiology and Biomechanics, San Antonio, Texas, March 15-17, 1982.

Kazarian, L.E. and Van Sickle, D.C., "A Primate Model of Spondylosis Deformans Traumatica," presented at the 1982 Orthopaedic Research Society Meeting.

Kazarian, L.E., "Vertebral Strength Investigations Following Space Flight," presented at the International Union of Physiological Sciences, Innsbruck, Austria.

Kazarian, L.E. and Oloff, C.M., "Effects of Whole-Body Immobilization on Lumbar Vertebral Body Strength - Hypokinesia II," NASA Life Sciences
TR-XX, September 1981.

Engin, A. and Kazarian, L.E.," "Active Muscle Force and Moment Response of the Human Arm and Shoulder," published in Aviation, Space and Environmental Medicine, September 1981.

Kazarian, L.E., "Vertebrae from Rats Following Space Flight," submitted to International Society for the Study of the Lumbar Spine, Paris, May 16-21, 1981, also published in the Journal of Physiology, September 1981.

Kazarian, L.E., " Classification of Simple Spinal Column Injuries," presented at the Neuroelectric Society on May 29, 1981, published as Chapter 7, Human Biodynamic Response, Charles Thomas, publisher.

Kazarian, L.E. and von Gierke, H.E., "The Effects of Hypokinesis in Primates on Bone Strength," published in Acta Astronautica, International Academy of Astronautics, Paris, France, February 1981.

Kazarian, L.E., "Fractures, Dislocations, and Fracture Dislocation of the
Spine - Description and Classification," Exercise and Sports Sciences Reviews, Vol 9, American College of Sports Medicine. Franklin Institute Press, 1981.

Kazarian, L.E., "K307 - Vertebral Body Strength of Rat Spinal Columns - COSMOS 1129," Final Report - November 1980, National Aeronautics and Space Administration, Moffett Field, California.

Kazarian, L.E., "Orthopaedic Biomechanics and Mineral Metabolism Related to Space Flight," December 21, 1979, Sixth Man in Space Symposium, Bonn-Bad, Godesburg, November 1980.

Kazarian, L.E., Collins, G., Muhic, L. and Becton, F., "Strength Characteristics of Rat Spinal Columns - COSMOS 1120, Advances in Physiological Sciences," Volume 19 Gravitational Physiology: J. Hideg and O. Gazenko Editors; Pergamon Press, Akademiai Kiado. Budapest, 1980.

Kazarian, L.E., "Assuring Validity of Test Conditions," presented at the Workshop on Spinal Stability, Loyola University of Chicago Medical Center, October 15-17, 1980.

Kazarian, L.E., "Cephalocaudal Loads," presented at the Workshop on Spinal Stability, Loyola University of Chicago Medical Center, October 15-17, 1980.

Slonim, A.R. and Kazarian, L.E., "Preliminary Study of the Effects of Prolonged Acceleration on Spinal Dynamics of Baboons," AFAMRL-TR-80-40 (Part I & II).

Kazarian, L.E., "The Classification of Spinal Column Deformities Resulting from Aircraft Ejection Forces," ASME Paper 80 ENAS-44.

Kazarian, L.E., "Vertebral Centra Morphology and Strength, COSMOS 1129," presented at the International Congress of Physiological Science, Congress Centre, Budapest, Hungary, July 1980.

Kazarian, L.E., "The Schmorl's Nodes and Burst Fractures," presented at the International Society for the Study of the Lumbar Spine, New Orleans, Louisiana, May 24-28, 1980.

Kazarian, L.E., Belk, W. and Hoffman, H., "Occult Traumatic Lesions of the Upper Cervical Vertebrae," NATO/AGARD Aerospace Medical Panel Meeting, Bodo, Norway, May 12-23, 1980.

Kazarian, L.E. and Belk, W., "Fracture and Dislocations of the Cervical Spine Due to Ejection Forces," presented at the Cervical Spine Research Society, Boston, Massachusetts, December 1979.

Kazarian, L.E., "Vertebrae from Rats Following Space Flight," submitted to International Society for the Study of the Lumbar Spine, Paris, May 16-21 1981, also published in the Journal of Physiology, September 1981.

Kazarian, L.E., " Classification of Simple Spinal Column Injuries," presented at the Neuroelectric Society on May 29, 1981, published as Chapter 7, Human Biodynamic Response, Charles Thomas, publisher.

Kazarian, L.E. and von Gierke, H.E., "The Effects of Hypokinesia in Primates on Bone Strength," published in Acta Astronautica, International Academy of Astronautics, Paris, France, February 1981.

Kazarian, L.E., "Fractures, Dislocations, and Fracture Dislocation of the Spine - Description and Classification," Exercise and Sports Sciences Reviews, Vol 9, American College of Sports Medicine, Franklin Institute Press, 1981

Kazarian, L.E.,"K307 - Vertebral Body Strength of Rat Spinal Columns - COSMOS 1129," Final Report - November 1980, National Aeronautics and Space Administration, Moffett Field, California.

Kazarian, L.E., "Orthopaedic Biomechanics and Mineral Metabolism Related to Space Flight," December 21, 1979, Sixth Man in Space Symposium, Bonn-Bad, Godesburg, November 1980.

Kazarian, L.E., Collins, G., Muhic, L. and Becton, F., "Strength Characteristics of Rat Spinal Columns - COSMOS 1120, Advances in Physiological Sciences," Volume 19 Gravitational Physiology: J. Hideg and O. Gazenko Editors; Pergamon Press, Akademiai Kidao, Budapest, 1980.

Kazarian, L.E.,"Assuring Validity of Test Conditions," presented at the Workshop on Spinal Stability, Loyola University of Chicago Medical Center, October 15-17, 1980.

Kazarian, L.E., "Cephalocaudal Loads," presented at the Workshop on Spinal Stability, Loyola University of Chicago Medical Center, October 15-17, 1980.

Slonim, A.R. and Kazarian, L.E., "Preliminary Study of the Effects of Prolonged Acceleration on Spinal Dynamics of Baboons," AFAMRL-TR-80-40 (Part I & II).

Kazarian, L.E., "The Classification of Spinal Column Deformities Resulting from Aircraft Ejection Forces," ASME Paper 80 ENAS-44.

Kazarian, L.E., "Vertebral Centra Morphology and Strength, COSMOS 1129," presented at the International Congress of Physiological Science, Congr. Centre, Budapest, Hungary, July 1980.

Kazarian, L.E., "The Schmorl's Nodes and Burst Fractures," presented at the International Society for the Study of the Lumbar Spine, New Orleans, Louisiana, May 24-28, 1980.

Kazarian, L.E., Belk, W. and Hoffman, H., "Occult Traumatic Lesions of the Upper Cervical Vertebrae," NATO/AGARD Aerospace Medical Panel Meeting, Bodo, Norway, May 12-23, 1980.

Kazarian, L.E. and Belk, W., "Fracture and Dislocations of the Cervical Spine Due to Ejection Forces," presented at the Cervical Spine Research Society Boston, Massachusetts, December 1979.

Eurell, J.A. and Kazarian, L.E., "In-Vitro Recovery Mechanisms of Compression Deformed Vertebral Centra and Vertebral Disk Units," presented at the AFOSR Symposium, St. Louis University, St. Louis, Missouri, October 1979.

Kazarian, L.E., "Human Spinal Mechanisms: Injury Modes and Mathematical Modelling," presented at the American Society of Biomechanics Meeting, Pennsylvania State University, State College Pennsylvania, October 1979.

Kazarian, L.E., "Spinal Injury Mechanisms," presented at the Committee on Hearing, Bioacoustics and Biomechanics Meeting at the National Academy of Sciences, Washington, D.C., October 1979.

Kazarian, L.E., "Flight Physical Standards of the 1980's: Spinal Column Considerations," Conference on Pilot Selection and Flying Physical Standards for the 1980's published in proceedings and published as AMRL-TR-79-74, October 1979.

Kazarian, L.E., Beers, K. and Hernandez, J., "F/FB-111 Crew Escape Systems," Aviation, Space Environmental Medicine, September 1979.

Belk, W., Nash, P. and Kazarian, L.E., "Unusual Injury Patterns Resulting from a High Speed Ejection from an F-15B Aircraft," presented at the 50th Aerospace Medical Association Meeting in Washington, D.C., June 1979.

Kazarian, L.E., "Comparable Vertebral Body Strength in the Rhesus Monkey, Baboon, Chimpanzee and Man," presented at the International Lumbar Spine Society Meeting, Goteborg, Sweden, May 29, 1979.

Kazarian, L.E., "Compressive Strength Characteristics of Primate (Macaque Mulatta) Vertebral Centra," AAMRL-TR-79-8.

Kazarian, L.E. and von Gierke, H.E., "The Validation of Biodynamic Models," presented at the AGARD Conference entitled, "Models and Analogs for the Evaluation of Human Biodynamic Response, Performance and Protection," published in Proceeding No. 253, November 1978.

Kazarian, L.E., "Musculoskeletal Response to Impact Loading," presented at the Shock and Vibration Symposium, Washington, D.C., October 1978.

Eurell, J.A. and Kazarian, L.E., "In Vitro Recovery Mechanisms of Compression Deformed Vertebral Centra," AFOSR Symposium, Colorado Springs, Colorado, September 1978.

Kazarian, L.E., "Windblast, Windflail, and Spinal Injury Due to Escape," AFOSR Symposium, USAF Academy, Colorado Springs, Colorado, September 1978.

Kazarian, L.E. and Belk, W., "Biomechanics of Spinal Injuries Due to Ejection Forces," presented at the Biennial Scientific Sessions of the Joint Committee on Aviation Pathology, U.S. Naval Academy, Annapolis, Maryland, September 5-8, 1978.

Kazarian, L.E., "Clinical and Biomechanical Observation of the Lumbar Spines of Ejected Aircrewmen," presented at the International Lumbar Spine Society, San Francisco, California, June 1978.

Kazarian, L.E., "Recovery Mechanics Following Compression of Trabecular Bone," presented at the International Lumbar Spine Society, San Francisco, California, June 1978.

Kazarian, L.E., "Structural Testing of the Human Spinal Column," presented at the Society for Experimental Stress Analysis, Wichita, Kansas, May 1978.

Kazarian, L.E., "Biomechanics of the Cervical Spine," presented at the American Osteopathic Academy of Orthopaedics, Somerset Inn, Troy, Michigan, May 1976.

Kazarian, L.E., "Creep Mechanics of the Intervertebral Joint," presented at the American Academy of Orthopaedic Surgeons - Orthopaedic Research Society, New Orleans, Louisiana, 1976.

Beers, K. and Kazarian, L.E., "Kinesiology of Impact-Related Spinal Injury in Aircrew Escape Modules," presented at the Aerospace Medical Association, Bal Harbour, Florida, 1976.

Kazarian, L.E., "The Strain-Rate Sensitivity of the Vertebral Body to Compressive Loads," presented at The International Society for the Study of the Lumbar Spine, Bermuda, 1976.

Kazarian, L.E., "Biomechanical Properties of Excised Intervertebral Joints to Constant Loads", presented at The International Society for the Study of the Lumbar Spine, Bermuda, 1976.

Sturges, D. and Kazarian, L.E., "Vertebral Column Kinematics," presented at the Aerospace Medical Association, San Francisco, California, 1975.

Davis, H. and Kazarian, L.E., "Biomechanics of Spinal Injury Due to Crash," presented at the Aerospace Medical Association, San Francisco, California, 1975.

Kazarian, L.E., Beaupre, F., Kaleps, I., Collette, S. and Muhic, L., "Interspecies Scaling and the Kinesiology of Gz Impact in the Rhesus Monkey, Baboon, Chimpanzee and Man," presented at the Aerospace Medical Association, San Francisco, California, 1975.

Kazarian, L.E., "The Viscoelastic Nature of the Intervertebral Disk," presented at the International Society for the Study of the Lumbar Spine, San Francisco, California, 1975.

Kazarian, L.E., "A Biomechanical Study of the Human Intervertebral Disk - With and Without Its Nucleus Pulposus," presented at the Orthopaedic Research Society, San Francisco, California 1975.

Kazarian, L.E., "Musculoskeletal Response of Sub-Human Primates to Gz Decelerative Forces," presented at the International Workshop on the Biomechanics of Voluntary Human Motion, Gainesville, Florida, 1975.

Kazarian, L.E., "Standardization and Interpretation of Spinal Injury Criteria," Chapter 7, Aircraft Crashworthiness, University of Virginia Press, 1975.

Kazarian, L.E., "Torso Kinesiology and Current High Acceleration Cockpit Seating Concepts," AFOSR Symposium Institute of Environmental Stress, University of California, Santa Barbara, California, 1975.

Kazarian, L.E., "The Primate as a Model for Crash Injury," presented at the 19th Stapp Car Crash Conference, San Diego, California, 1975. SAE Paper 751175, AMRL-TR-75-101.

Beers, K. and Kazarian, L.E., "Aircrew Backache: A Systems Approach to Alleviation," presented at the Aerospace Medical Association Meeting, San Francisco, California, 1975.

Kazarian, L.E., "Creep Characteristics of the Human Spinal Column," The International Society for the Study of the Lumbar Spine, Orthopaedic Clinics of North America, Vol. 6, No. 1, 1975.

Kazarian, L.E., "Creep Characteristics of the Human Spinal Column," presented at The International Society for the Study of the Lumbar Spine, London, May 1974.

Kazarian, L.E., "Abrupt - Gz Deceleration - The Schmorl's Node and Its Implications with Regard to Future Spinal Kinetics," presented at the XXII International Congress of Aviation and Space Medicine, Beirut, 1974.

Kazarian, L.E., "The Human Intervertebral Disk - With and Without Its Nucleus Pulposus," presented at the Armenian Medical Congress, Beirut, 1974.

Kaleps, I., Kazarian, L.E. and von Gierke, H.E., "Human Spine Response Derived from Segmental Material Properties," presented at the Aerospace Medical Association Meeting, Washington, D.C., 1974.

Kazarian, L.E. and von Gierke, H.E., "The Primate Spine as a Model for the Human Spine Under Biodynamic Stress," presented at the Aerospace Medical Association Meeting, Washington, D.C., 1974.

Kazarian, L.E. and von Gierke, H.E., "The Sub-Human Primates as a Tool for Spinal Injury Research," presented at the XXI International Congress of Aviation and Space Medicine, Munich, Germany, 1973, AMRL-TR-73-52.

Kazarian, L.E., "Dynamic Response Characteristics of the Human Vertebral Column - An Experimental Study of Human Autopsy Specimens," Monograph No. 440, Acta Orthop. Scandinavica, Munksgaard, Copenhagen, Denmark, 1973.

Kazarian, L.E. and Hirsch, C., "Mechanical Impedance Analysis and Dynamic Response Characteristics of the Human Vertebral Column," presented at the 3rd International Conference on Medical Physics, Goteborg, 1972.

Kazarian, L.E. and Hirsch, C., "Clinical Implications of Creep - Study on Human Autopsy Specimens," Riksstem, Stockholm, 1972.

McCally, M., Kazarian, L.E. and von Gierke, H.E., "Cardiovascular and Metabolic Effects of Bed Rest and Immobilization - A Simulated Weightlessness," presented at the 21st International Astronautical Congress, Konstanz, Germany, 1971.

Kazarian, L.E. and von Gierke, H.E., "Hard Tissue, Thoracic and Abdominal Injury Mechanisms," Linear Acceleration Stress Meeting, Oporto, Portugal, 1971, Published in Advisory Group for Aerospace Research and Development (AGARD) Proceedings AGARD-NATO, Neuilly-sur-Seine, France.

Kazarian, L.E., Boyd, D. and von Gierke, H.E., "The Dynamic Biomechanical Nature of Spinal Fractures and Articular Facet Derangement," AMRL-TR-71-117, AGARD-CP-88-71.

Kazarian, L.E. and von Gierke, H.E., "The Effects of Hypogravic and Hypodynamic Environments on the Skeletal System and Acceleration Tolerance," Biodynamic Models and Their Application, Dayton, Ohio 1971, AMRL-TR-71-29.

Kazarian, L.E., Hahn, J. and von Gierke, H.E., "Biomechanics of the Vertebral Column and Internal Organ Response to Seated Spinal Impact in the Rhesus Monkey," 14th Stapp Car Crash Conference Proceedings, AMRL-TR-70-85, SAE Paper 700898.

Kazarian, L.E. and von Gierke, H.E., "Age and Exercise as Factors Influencing Osteoporosis, Bone Strength and Acceleration Tolerance," presented at the 27th Aerospace Medical Panel Meeting, Garmisch-Partenkirchen, Germany, published by Advisory Group for Aerospace Research and Development (AGARD), September 1970.

119

Kazarian, L.E., "Creep Characteristics of the Human Spinal Column," The International Society for the Study of the Lumbar Spine, Orthopaedic Clinics of North America, Vol. 6, No. 1, 1975.

Kazarian, L.E., "Creep Characteristics of the Human Spinal Column," presented at The International Society for the Study of the Lumbar Spine, London, May 1974.

Kazarian, L.E., "Abrupt - Gz Deceleration - The Schmorl's Node and Its Implications with Regard to Future Spinal Kinetics," presented at the XXII International Congress of Aviation and Space Medicine, Beirut, 1974.

Kazarian, L.E., "The Human Intervertebral Disk - With and Without Its Nucleus Pulposus," presented at the Armenian Medical Congress, Beirut, 1974.

Kaleps, I., Kazarian, L.E. and von Gierke, H.E., "Human Spine Response Derived from Segmental Material Properties," presented at the Aerospace Medical Association Meeting, Washington, D.C., 1974.

Kazarian, L.E. and von Gierke, H.E., "The Primate Spine as a Model for the Human Spine Under Biodynamic Stress," presented at the Aerospace Medical Association Meeting, Washington, D.C., 1974.

Kazarian, L.E. and von Gierke, H.E., "The Sub-Human Primates as a Tool for Spinal Injury Research," presented at the XXI International Congress of Aviation and Space Medicine, Munich, Germany, 1973, AMRL-TR-73-52.

Kazarian, L.E., "Dynamic Response Characteristics of the Human Vertebral Column - An Experimental Study of Human Autopsy Specimens," Monograph No. 146, Acta Orthopaedica Scandinavica, Munksgaard, Copenhagen, Denmark, 1973.

Kazarian, L.E. and Hirsch, C., "Mechanical Impedance Analysis and Dynamic Response Characteristics of the Human Vertebral Column," presented at the 3rd International Conference on Medical Physics, Goteborg, 1972.

Kazarian, L.E. and Hirsch, C., "Clinical Implications of Creep - Study on Human Autopsy Specimens," Rikstem, Stockholm, 1972.

McCally, M., Kazarian, L.E. and von Gierke, H.E., "Cardiovascular and Metabolic Effects of Bed Rest and Immobilization - A Simulated Weightlessness," presented at the 21st International Astronautical Congress, Konstanz, Germany, 1971.

Kazarian, L.E. and von Gierke, H.E., "Hard Tissue, Thoracic and Abdominal Injury Mechanisms," Linear Acceleration Stress Meeting, Oporto, Portugal, 1971, Published in Advisory Group for Aerospace Research and Development (AGARD) Preceedings AGARD-NATO, Neuilly-sur-Seine, France.

Kazarian, L.E., Boyd, D. and von Gierke, H.E., "The Dynamic Biomechanical Nature of Spinal Fractures and Articular Facet Derangement," AMRL-TR-71-117, AGARD-CP-88-71.

Kazarian, L.E. and von Gierke, H.E., "The Effects of Hypogravic and Hypodynamic Environments on the Skeletal System and Acceleration Tolerance," Biodynamic Models and Their Application, Dayton, Ohio 1971, AMRL-TR-71-29.

Kazarian, L.E., Hahn, J. and von Gierke, H.E., "Biomechanics of the Vertebral Column and Internal Organ Response to Seated Spinal Impact in the Rhesus Monkey," 14th Stapp Car Crash Conference Proceedings, AMRL-TR-70-85, SAE Paper 700898.

Kazarian, L.E. and von Gierke, H.E., "Age and Exercise as Factors Influencing Osteoporosis, Bone Strength and Acceleration Tolerance," presented at the 27th Aerospace Medical Panel Meeting, Garmisch-Partenkirchen, Germany, published by Advisory Group for Aerospace Research and Development (AGARD), September 1970.

Sarrafian, S., Kazarian, L.E., Topouzian, L.E., Sarrafian, V. and Siegelmann, A., "Strain Variation in the Components of the Extensor Apparatus of the Finger During Flexion and Extension - A Biomechanical Study," Journal of Bone and Joint Surgery, July 1970.

Kazarian, L.E., et.al, "Morphologic Changes of Hard Tissue Due to Immobilization and Potential Countermeasures," Bone Measurement Conference, Chicago, May, 1970, published in Proceedings of Bone Measurement Conference, Editor J.R. Cameron, Atomic Energy Commission Conference 700515.

Kazarian, L.E., et.al, "Soft Tissue Response-Threshold Limit Values in Macaca Mulatta Exposed to Longitudinal Spinal Impact," presented at the 41st Aerospace Medical Association Meeting, St. Louis, 1970.

Mohr, G., Brinkley, J. and Kazarian, L.E., "Variations of Spinal Alignment in Egress Systems and Their Effect," published in Aerospace Medicine, September, 1969, AMRL-TR-76-232.

Kazarian, L.E. and von Gierke, H.E., "Disuse Atrophy in Macaca Mulatta and Its Implications for Extended Space Flight," presented at the Hypogravics and Hypodynamics Symposium, French Lick, Indiana, June, 1969, published in Proceeding of the Symposium on Hypogravics and Hypodynamics Environment, NASA-SP-269.

Kazarian, L.E. and von Gierke, H.E., "Immobilization Osteoporosis and Its Effects on Osseous Structures," presented at the 11th Aerospace Medical Association Meeting, San Francisco, California, May 1969, AMRL-TR-69-50.

Kazarian, L.E. and von Gierke, H.E., "Bone Loss as a Result of Immobilization and Chelation, Preliminary results in Macaca Mulatta," published in Clinical Orthopaedics and Related Research, 1969, AMRL-TR-68-69.

Kazarian, L.E., Mohr, G. and von Gierke, H.E., "Mechanics of Vertebral Body Injury in Monkeys as a Result of Spinal (+Z) Impact," presented at the 39th Annual Aerospace Medical Association Meeting, Miami Beach, Florida, May 1968.

Kazarian, L.E. and von Gierke, H.E., "Preliminary Results of Immobilization and Chelation Study in Macaca Mulatta," presented at the Annual Association of Physical Anthropologists and Society for the Human Biology, Wayne State University, April 1968, AMRL-TR-68-69.

120

Supreme Court, U.S.
FILED
FEB 7 2001
OFFICE OF THE CLERK

No. 00-1129

In The

Supreme Court of the United States

DAVID ODDI; ERIN ODDI, His Wife,

Petitioners,

v.

FORD MOTOR COMPANY, et al.

Respondent.

On Petition For Writ Of Certiorari To The United States Court Of Appeals For The Third Circuit

BRIEF IN OPPOSITION TO PETITION FOR WRIT OF CERTIORARI

JOHN H. WILLIAMS, JR., ESQUIRE
DONALD J. MCCORMICK, ESQUIRE
Counsel of Record
GORR, MOSER, DELL & LOUGHNEY
437 Grant Street
1300 Frick Building
Pittsburgh, PA 15219
(412) 471-1180

Attorneys for Respondents
Grumman Allied Industries, Inc.;
Grumman Olson Bodies, Inc.;
Olson Bodies, Inc.

COCKLE LAW BRIEF PRINTING CO., (800) 225-6964
OR CALL COLLECT (402) 342-2831

QUESTION PRESENTED FOR REVIEW

Petitioner Oddi contends that the vehicle in which he was injured was not crashworthy. It is well-established in Pennsylvania law that a plaintiff in a crashworthiness case must establish four elements:

(1) the design of the product was defective;

(2) when the design was made, an alternative, safer design, practicable under the circumstances, existed;

(3) what injuries, if any, the plaintiff would have received had the alternative, safer design, been used; and

(4) what injuries were attributable to the defective design.

The District Court concluded, under Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579 (1993), that Plaintiff's expert lacked a sufficiently reliable basis for his conclusion that the vehicle was defectively designed. The District Court further concluded that Plaintiff's expert failed to present any evidence whatsoever of an alternative, feasible design.

The issues Petitioner truly presents to this Honorable Court are fairly set forth as follows:

QUESTION PRESENTED FOR REVIEW – Continued

Whether the District Court abused its discretion when it concluded that Plaintiff's expert lacked anything but a hunch that the vehicle could have been made safer; and

Whether the Third Circuit Court erred in refusing to shift to the Defendants the burden of proof with respect to whether the vehicle is crashworthy as established by Pennsylvania law.

PARTIES TO THE PROCEEDING

Petitioner

David Oddi is a private individual and has no corporate affiliations.

Respondents

Ford Motor Company, Grumman Allied Industries, Inc., Grumman Olson Bodies, Inc., and Olsen Bodies, Inc.

TABLE OF CONTENTS

Page

QUESTION PRESENTED FOR REVIEW i

PARTIES TO THE PROCEEDING iii

TABLE OF CONTENTS iv

TABLE OF AUTHORITIES vi

REASONS TO DENY THE PETITION 1

I. Statement of the Case 1

A. Nature of the Case 1

B. Course of Proceedings and Disposition In Lower Courts 2

II. Argument 5

A. The Petition Fails To Satisfy Or Even Address The Criteria For Granting A Writ Of Certiorari 5

1. The Petition Fails To Suggest That The Issue Presented Has General Importance Or That A Conflict Exists 5

2. Certiorari Is Inappropriate Where The Petition Merely Contends That The Proper Standard Was Misapplied 7

3. Petitioner Attempts To Challenge – And To Avoid His Burden Of Proof Under – State Law 7

B. The Issue For Which Petitioner Seeks Review Was Not Decided By Either Lower Court 8

C. The Petition Fails To Address The Third Circuit Court's Alternative Ground For Affirmance And Therefore Seeks An Advisory Opinion .. 11

TABLE OF CONTENTS – Continued

Page

D. The Petition Seeks To Challenge A Supported Discretionary Determination 13

1. The Decision From Which Petitioner Would Appeal Is A Discretionary Determination 13

2. The Decision From Which Petitioner Would Appeal Is Supported 14

E. The Merits Of The Petition 15

1. Introduction 15

2. Noettl's Inability To Address The Elements And Corollaries Of A Crashworthiness Test 16

3. Response To Petitioner's Position..... 20

III. Conclusion 22

TABLE OF AUTHORITIES

Page

Cases

United States Supreme Court

Celotex Corp. v. Catrett, 477 U.S. 317 (1986) 2

Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579 (1993) 3, 4, 5

Kumho Tire Company, Ltd. v. Carmichael, 526 U.S. 137 (1999) 13, 14

Railroad Commission of Texas v. Pullman Co., 312 U.S. 496 (1941) 8

United States Court of Appeals For The Third Circuit

Barker v. Deere, 60 F.3d 158 (3rd Cir. 1995) 2, 3, 19

Childers v. Joseph, 842 F.2d 689 (3rd Cir. 1988)..... 2

Equimark Commercial Fin. Co. v. C.I.T. Fin. Servs. Corp., 812 F.2d 141 (3rd Cir. 1987)..... 2

United States District Court

Barnes v. American Tobacco Co., Inc., 985 F.Supp. 842 (E.D.Pa. 1997) 2

Pennsylvania Superior Court

Kupetz v. Deere & Co., Inc., 435 Pa.Super. 16, 644 A.2d 1213 (1994), *appeal denied*, 539 Pa. 693, 653 A.2d 1232 (1994) 3, 8, 21

TABLE OF AUTHORITIES – Continued

Pages

Rules

Rules of the Supreme Court

Rule 10..... 5, 6, 7

REASONS TO DENY THE PETITION

I. Statement of the Case

A. Nature of the Case

This is a crashworthiness/products liability action arising out of a vehicle accident that occurred on June 21, 1993. Petitioner David Oddi claims that he suffered certain injuries as a result of alleged deficiencies in the design and/or manufacture of the vehicle. Oddi does not assert that the alleged deficiencies *caused* the accident; rather, Oddi asserts that the alleged deficiencies allowed him to suffer injuries that a non-defectively designed vehicle would not have allowed. Oddi claims that Defendants Ford Motor Company and Grumman[1] were each responsible for the design and manufacture of certain portions of the vehicle.

Oddi contends, for a variety of reasons, that the truck was not crashworthy. First, Oddi contends that the design of the truck's bumper allowed the underside of the truck to ride up onto a guardrail and slide into a bridge abutment. Defendants dispute that the truck rode up onto the guardrail at all, and contend that, instead, the truck struck the guardrail and rolled over it.

Oddi further contends that, having rode up on the guardrail, deficiencies in the strength of the flooring allowed the flooring to become bent upon impact with a bridge abutment and apply forces to Oddi's legs, which

---

[1] The Grumman defendants include Grumman Allied Industries, Inc., Grumman Olson Bodies, Inc., and Olson Bodies, Inc. They are referred to collectively herein as "Grumman."

he contends was the cause of his leg injuries. Defendants dispute that the flooring was deficient, and also dispute whether the bending of the floorboards caused any injury whatsoever to Oddi's legs.

B. Course of Proceedings and Disposition In Lower Courts

After deposing Oddi's experts, each of the Defendants moved for summary judgment. Grumman brought a challenge to Oddi's case under Celotex Corp. v. Catrett, 477 U.S. 317, 106 S.Ct. 2548, 91 L.Ed.2d 265 (1986),[2] contending that, under Pennsylvania law, Oddi has certain interrelated burdens of proof in a crashworthiness case which Oddi cannot meet. Specifically, in Barker v. Deere,

---

[2] The moving party generally has the burden of identifying evidence which it believes shows an absence of a genuine issue of material fact. Celotex Corp. v. Catrett, 477 U.S. 317, 324 (1986); Childers v. Joseph, 842 F.2d 689, 694 (3rd Cir. 1988). However, the moving party's burden may be discharged by *demonstrating that there is an absence of evidence to support the non-moving party's case.* Celotex, 477 U.S. at 325. Once the moving party satisfies its burden, the burden shifts to the non-moving party, who must go beyond its pleading and designate specific facts by use of affidavits, depositions, admissions, or answers to interrogatories showing there is a genuine issue for trial. Id. at 324. Moreover, when the non-moving party bears the burden of proof, it must "make a showing sufficient to establish the existence of [every] element essential to that party's case." Equimark Commercial Fin. Co. v. C.I.T. Fin. Servs. Corp., 812 F.2d 141, 144 (3rd Cir. 1987) (*quoting* Celotex, 477 U.S. at 322). *See also,* Barnes v. American Tobacco Co., Inc., 985 F.Supp. 842 (E.D.Pa. 1997).

60 F.3d 158 (3rd Cir. 1995), the Court set forth the elements that must be shown to succeed on a theory of crashworthiness:

> [T]o establish a cause of action based on a theory of crashworthiness, the claim asserted here, a plaintiff must show:
>
> (1) the design of the product was defective;
>
> (2) when the design was made, an alternative, safer design, practicable under the circumstances existed;
>
> (3) what injuries, if any, the plaintiff would have received had the alternative, safer design, been used; and
>
> (4) what injuries were attributable to the defective design.

Barker, 60 F.3d at 151-52, n. 3. *See also* Kupetz v. Deere & Co., Inc., 435 Pa.Super. 16, 644 A.2d 1213 (1994), *appeal denied*, 593 Pa. 693, 653 A.2d 1232 (1994).

Having no way of being certain what evidence Oddi would contend satisfied these elements of proof, or what affidavits Oddi might provide in opposition to the motion, Grumman refrained at that point from expressly making a challenge under Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579 (1993), to any of the evidence presented to that point in the case. Rather, Grumman observed that nothing produced by Oddi to that point was admissible or carried his burden of proof. Grumman relied upon substantial admissions in Oddi's expert's depositions which established that Oddi would not be able to use *that* evidence to carry his burden.

Ford also moved for summary judgment. Ford contended that the evidence of lack of crashworthiness produced by Oddi to date would not satisfy the standards for scientific evidence established by Daubert, in that this Court has required that experts set forth the bases for and reliability of their conclusions.

In response to Grumman's and Ford's Motions for Summary Judgment, Oddi filed a Brief replete with photographs and expert reports and deposition testimony and affidavits that failed to address or failed to satisfy the points raised in the Motions for Summary Judgment.

After reviewing the materials upon which Oddi chose to rely to oppose the Motions for Summary Judgment, Grumman filed a reply brief that observed: (1) that the testimony, affidavits and reports cited by Oddi *still* did not satisfy his burden of showing that the truck was not crashworthy, either by establishing an alternative, feasible design or by showing what injuries he would have sustained had the truck utilized another design, and (2) that Oddi's information was *not* admissible for the reasons set forth in Ford's motion and brief, *i.e.*, the Daubert decision requires that experts articulate acceptable bases for their opinions.

The United States District Court for the Western District of Pennsylvania granted the Motions for Summary Judgment, concluding that the information set forth by Oddi in opposition to the pending motions failed to satisfy the standards set forth in Daubert or a plaintiff's burden in a crashworthiness case under Pennsylvania law. The Court issued an Opinion and Order in which the Court concluded that Oddi's experts' reports, depositions

and affidavits did not so much as approach a demonstration that his experts' conclusions and opinions had any reliability or basis whatsoever. Various motions to reconsider were denied.

The United States Court of Appeals for the Third Circuit affirmed, concluding as did the District Court that Oddi's experts did not satisfy Daubert and did not satisfy the elements of a crashworthiness case under Pennsylvania law.

The instant Petition followed.

II. Argument

A. The Petition Fails To Satisfy Or Even Address The Criteria For Granting A Writ Of Certiorari

1. The Petition Fails To Suggest That The Issue Presented Has General Importance Or That A Conflict Exists

Rule 10 of the Supreme Court Rules sets forth criteria which indicate the character of the reasons to be considered by the Court for granting a petition for a writ of certiorari. Said reasons include, but are not necessarily limited to:

> cases involving a conflict between the decision from which an appeal is sought and other appellate decisions on the same important matter;
>
> cases involving a decision which "so far departed from the accepted and usual course of judicial proceedings," or sactioned such a decision by the lower court;

> cases involving a decision by a state court of last resort on an imporant federal question that conflicts with a decision of another state court of last resort or a court of appeals;
>
> cases involving a decision on important issues of federal law that have not been but should be settled by this Honorable Court.

See Rule 10. Petitioner Oddi does not even attempt to establish in his Petition how the instant matter might possess such significance as could warrant the attention of this Court. He does not invite this Court's attention to a single decision that has reached a conclusion contrary to the conclusions reached below. Nor has petitioner endeavored to explain what far-reaching effect the decision of the Third Circuit Court of Appeals might have on future litigants, or how a reversal of that decision might right a great injustice.

It is respectfully suggested that Petitioner Oddi does not venture this undertaking, in part, because the issue he would bring to this Court lacks such import. It is further suggested that Petitioner Oddi avoids this discussion, in part, because the relief he seeks depends upon this Court's willingness to re-write Pennsylvania law on the elements of a cause of action for a crashworthiness claim, or, at least, a willingness by this Court to alter Pennsylvania law with respect to the burden of proof on the elements of such a cause of action.

The character of the issue, then, is not such as would warrant review by this Court under the standards articulated in Rule 10.

2. Certiorari Is Inappropriate Where The Petition Merely Contends That The Proper Standard Was Misapplied

Rule 10 instructs that a petition for a writ "is rarely granted" when the asserted error consists of a misapplication of a properly stated rule of law. In this case, Petitioner mounts no challenge to the law stated or applied by the Third Circuit Court or the District Court; rather, Petitioner complains of the *manner* in which the law was applied. In fact, Petitioner expressly contends:

> The Third Circuit, in affirming the district court, misapplied Daubert by applying a rigid standard to Mr. Noettl's expert testimony rather than applying a flexible standard.

Petition at 6. That is, Petitioner contends that the Third Circuit Court, as well as the District Court, *misapplied* the law. Rule 10 expressly indicates that this is not the character of decision which warrants review by this Honorable Court.

3. Petitioner Attempts To Challenge – And To Avoid His Burden Of Proof Under – State Law

Finally, for the reasons set forth in greater detail herein, Petitioner's true issue is *not* one of federal law, but rather, one of state law, to wit, whether the Third Circuit Court erred in refusing to shift to the defendants the burden of proof with respect to whether the vehicle is crashworthy. It is clear under Pennsylvania law that the burden of proof with respect to a safer alternative design

rests with the Plaintiff (element 2). Kupetz v. Deere & Co., Inc., 435 Pa.Super. at ___, 644 A.2d at 1218. It is equally clear that Plaintiff seeks to shift that burden to the Defendants in contravention of Pennsylvania law. With due respect to the Court, the burden of proof required to establish a state law cause of action is not a matter on which this Honorable Court is even empowered to issue an authoritative decision. *See* Railroad Commission of Texas v. Pullman Co., 312 U.S. 496 (1941).

In summary, Petitioner has failed to set forth a basis that would warrant the grant of a writ of certiorari to review the merits of the matters involved.

B. The Issue For Which Petitioner Seeks Review Was Not Decided By Either Lower Court

As stated in the Petition, Petitioner asks this Court to determine whether an expert must conduct his or her own testing of a vehicle before determining whether the product is crashworthy. Although this issue is superficially enticing, the fact is that neither the Third Circuit Court of Appeals nor the District Court so held; in fact, neither Court considered the issue at all. The District Court observed and opined:

> As Noettl's statements demonstrate, he did no testing of any evidence. He identified no specific treatises, articles, or written authorities on any issue. He performed no calculations. He used no models or computer simulations. Instead, to form his opinion, he relied on his experience and training. His curriculum vitae shows considerable experience and training in the area about which he seeks to testify, Doc.

> No. 84 Exhibit I, and defendants do not challenge his qualifications. The issue is whether Oddi has sufficient evidence that Noettl brought those qualifications to bear on the particular problems of the case.
>
> We find that he has not. We need not measure his adherence to any of the Daubert-related factors identified by the Third Circuit because he satisfied none of them. He has not rendered an opinion like the one found in Kuhmo, where there was at least a particular methodology about the tire failure to examine. Reduced to its essence, Noettl's theory is that the bumper and floor should have been made stronger, by using thicker metal or reinforcement. The absence of reviewable study, measurement, calculation, or reference accompanying these conclusions is sufficient to render them unreliable. He has not supplied us with the bases for his broad conclusions, and thus we are left with no means to test them.

Appendix, 103a-104a. It is obvious, then, that the District Court was prepared to consider treatises, articles, written authorities, calculations, models and computer simulations in its determination of whether Mr. Noettl's opinion was substantiated. It is equally obvious that the Court was willing to consider *any* scientific basis for those opinions; however, the Court simply was unable to find any even though Mr. Noettl had been put to the task of producing any basis that there was. Thus, the District Court properly exercised its discretion and dismissed the case.

The Court of Appeals agreed:

> Although Daubert does not require a paradigm of scientific inquiry as a condition precedent to admitting expert testimony, it does require more than the haphazard, intuitive inquiry that Noettl engaged in. Given Noettl's responses, Oddi could not establish the *existence* of Noettl's methodology and research let alone the *adequacy* of it. (footnote omitted).
>
> . . .
>
> Not only did Noettl not test his hypothesis, he did not even attempt to calculate the force that was inflicted on the truck by the guardrail at impact; he did not calculate the force of the bridge abutment on the truck; and he did not measure the strength of the guardrail or determine how much force the guardrail could sustain. He did not know how much was required to bend the bumper or penetrate the floor, or how much force the bumper or floor could withstand. His hypothesis about adding a "wedge" or bracket to [the] bumper was likewise without support as he did not determine the tensile strength or gauge of whatever metal should be incorporated into his alternative design. Accordingly, there was no way of knowing if his suggested alternative would better protect the cab's occupant, or if the suggested modifications were practical.
>
> Essentially, Noettl's expert opinion that the front bumper would have sustained the impact with the guardrail and not ramped had it been strengthened with either bracketry or wedge supports and that the flooring in the occupant compartment should have been thicker or

> ribbed is based on nothing more than his training and years of experience as an engineer. Although there may be some circumstances where one's training and experience will provide an adequate foundation to admit an opinion and furnish the necessary reliability to allow a jury to consider it, this is not such case. *See e.g.*, Lauria, at 599 (former Conrail foreman's many years of experience with railroad track equipment, maintenance and safety equipment, qualified him as an expert to testify about Amtrak's responsibility to inspect and maintain railroad track in a safe condition). Noettl's *ipse dixit* does not withstand Daubert's scrutiny. An "expert's opinion must be based on the methods and procedures of science rather than on subjective belief or unsupported speculation." Paoli II, at 741 (citations and internal quotations omitted).

Appendix, 42a-43a; 47a-48a.

Thus, it can be seen that the issue Petitioner attempts to present to this Court – whether an expert "must conduct testing of the subject vehicle" to determine whether it is crashworthy – was not before or decided by the courts below.

C. The Petition Fails To Address The Third Circuit Court's Alternative Ground For Affirmance And Therefore Seeks An Advisory Opinion

In addition to affirming the District Court's discretionary determination that Mr. Noettl's testimony was not sufficiently reliable to be admissible, the Third Circuit Court ruled in the alternative that Petitioner *also* failed to

satisfy the third and fourth elements of a crashworthiness claim in that Mr. Kazarian's testimony utterly failed to establish what injuries would have resulted absent the alleged design defect:

> We also note an obvious gap in Oddi's argument. As recited earlier, Oddi retained two experts, Noettl and Kazarian. The district court also found that Kazarian's expert opinion testimony did not satisfy Daubert. 3/31/99 Dist. Ct. Op. at 15-16. Kazarian's expert opinion went to the "enhanced injuries" element of the crashworthiness claims. Unless Oddi can establish that the defendants' design and/or manufacture enhanced injuries he would not have otherwise sustained, or caused him to sustain injuries that he would not have sustained otherwise, there can be no recovery under a theory of crashworthiness. Carrasquilla, 963 F.Supp. at 458. Consequently, even assuming *arguendo*, that Oddi convinced us that Noettl's testimony was improperly excluded, his failure to address the admissibility of Kazarian's testimony means that Oddi has no admissible evidence to demonstrate the "enhanced injuries" elements of a crashworthiness claim.
>
> . . .
>
> Moreover, Kazarian's testimony would not have been as helpful as Oddi believes even if it had been admitted. Kazarian conceded that he had no opinion of what injuries Oddi would have suffered had there been no compromise to the floor of the occupant compartment and had no opinion on what injuries Oddi would have sustained if the truck had not ramped the guard rail.

Appendix, 48a-49a.

The Third Circuit Court of Appeals ruled that Petitioner's case was fatally deficient on two unrelated grounds. Petitioner attempts to challenge only the first of alternative grounds for affirmance. Therefore, any opinion this Court might render with respect to the challenged ground would be a mere advisory opinion that could have no effect on the outcome of the case; the second ground for affirmance would remain. Again, the pending Petition would not warrant review by this Honorable Court.

D. The Petition Seeks To Challenge A Supported Discretionary Determination

Although discretionary determinations are not immune from appellate review, they obviously provide an extremely limited opportunity for this Court to provide important guidance to the bench, the members of the bar and the nation's citizens. This observation is inherent in that part of Rule 10 that observes that this Court will rarely entertain challenges to the manner in which the correct law is alleged to have been applied to a given case. Further, this observation is particularly true where, as here, the determination is well-supported by the record.

1. The Decision From Which Petitioner Would Appeal Is A Discretionary Determination

Petitioner contends that the testimony of his "expert" was improperly excluded. As recently as Kumho Tire Co.

v. Carmichael, 526 U.S. 137 (1999), this Court emphasized the broad discretion accorded a district court in determining *how* to test the "expert's" opinions and whether to eventually admit those opinions:

> The trial court must have the same kind of latitude in deciding *how* to test an expert's reliability, and to decide whether or when special briefing or other proceedings are needed to investigate reliability, as it enjoys when it decides *whether* that expert's relevant testimony is reliable. Our opinion in Joiner makes clear that a court of appeals is to apply an abuse-of-discretion standard when it "review[s] a trial court's decision to admit or exclude expert testimony." 522 U.S. at 138-139. That standard applies as much to the trial court's decisions about how to determine reliability as to its ultimate conclusion. Otherwise, the trial judge would lack the discretionary authority needed both to avoid unnecessary "reliability" proceedings in ordinary cases where the reliability of an expert's methods is properly taken for granted, and to require appropriate proceedings in the less usual or more complex cases where cause for questioning the expert's reliability arises.

Kumho Tire, 526 U.S. at 152-53 (emphasis original).

2. The Decision From Which Petitioner Would Appeal Is Supported

Here, as set forth above, the District Court was unimpressed with the "basis" offered by Mr. Noettl in support of his opinion that the bumper and floorboards could feasibly have been strengthened to protect Oddi from the

injuries suffered in this accident. That decision was not only supported but compelled. Mr. Noettl himself testified under oath he had not tested his theories but that someone should. Mr. Noettl admits that he has conducted no tests, has no alternative design, and has no idea what would happen in the event the truck had been somehow strengthened in the manners he vaguely suggests. Rather, he argues that "someone" should determine whether his theories really work. *See* Appendix 23a-27a; 43a-46a; 79a-82a.

The Court reached a discretionary determination that such testimony is not acceptably reliable. Petitioner does not allege that any information was improperly considered by the District Court nor that any information that should have been considered was refused by that Court. Petitioner simply argues that he would have placed more emphasis on some considerations, and less on others, than did the District Court. The instant matter, then, is a classic example of the type of supported discretionary determination for which further review would provide no general benefit to the nation, even had the determination been incorrect.

E. The Merits Of The Petition

1. Introduction

This Respondent believes that a petition for a writ of certiorari is not a proper vehicle to argue the *merits* of Petitioner's position on the issue; rather, the Petition should address the importance of the resolution of the issue presented, including if possible an indication that

the issue is not presently the subject of agreement amongst the various courts of the nation.

Here, however, the Petition is addressed almost entirely to Petitioner's position on the issue, *i.e.*, the merits. In brief response, then, Respondent contends, for the reasons that follow, that the determination from which Petitioner would appeal is correct.

2. Petitioner's Experts' Was Unable To Address The Elements And Corollaries Of A Crashworthiness Test

Oddi's entire case is premised on the argument that running a vehicle into a guardrail at highway speed is foreseeable, and that any vehicle that allows an injury to occur in such an accident must therefore be defective. He requests that this Court allow his expert to set forth such a claim, notwithstanding the fact that he has consistently failed to address the requirement of Pennsylvania law that one who complains of the crashworthiness of a vehicle must establish certain elements, as well as corollaries to the elements, of the cause of action. However, Oddi's experts readily admit they are unprepared to address these issues. For example, one of the "remedies" suggested by Mr. Noettl was the use of a bracket to strengthen the front bumper. However, when asked about that, he had no idea how that should be constructed to provide greater safety to the occupants:

> Q. What if you used a brace? What type of metal should that brace be constructed from?
>
> A. Again, you could use the same as the bumper. Again, you would have a lot of

choices on that. The bracketry would probably not be as strong as the wedge. Probably not. Test it and maybe you would achieve a strength that would far exceed anything you could expect.

Q. What would the tensile strength or the gauge of the metal have to be on both of those options?

A. The way you go through that is look up in books and you say, "Here. We got some metal here and let's try this." Certain gauge, certain strength, something that is readily available. It's not a big thing, is what I'm trying to say . . .

Q. So this would be something relatively simple to look up in a book, and you could determine from the computations in some engineering book what you should be using. What would the name of the book be?

A. Any machine design book.

Q. Is that a particular book or is that a type of a book, machine design book?

A. That's a type of book.

Q. Could you give me an authority?

A. There are machine design books that give you all types of metal gauges. If you go through the design process for any of these things on a bumper, frame rails, exactly what they do – they don't sit down. They don't do finite element analysis. They look up in books what metal thickness, what's

our yield strength, what's our tensile properties of this metal, bang, bang, bang. We're going to use this.

Q. Have you done that?

A. No. I haven't done that, no.

Q. So you don't know what the thickness would have to be, what the metal gauge, what the tensile strength –

A. Right.

Q. – what type of material you would need to use; is that correct?

A. I told you, I would use – probably start with the same material that you have in the bumper. Take a piece of metal, turn it on its edge, put it in back of it, weld it on there for a test, see what strength you do gain out of this as far as impact, as far as bending moments and as far as shearing. You sure hope it won't sheer off. You would do that. You would say, "I want it a little bit stronger." The easiest way, by far, is to thicken the metal. That's all you have to do. Get a lower gauge metal and put that on there and try it again.

Appendix, 25a-27a. Mr. Noettl was similarly unable to explain how he determined that thickening or ribbing of the floorboards might provide a feasible alternative that would have mattered in this case.

Q. What was wrong with [the floor]?

A. It wasn't strong enough to prevent intrusion in this type of an accident into the occupant compartment, exposing the driver to the dangers of that intrusion.

Q. What should have been done?

A. The metal could have been made thicker. It could have been ribbed.

Q. How thick should it have been?

A. Well, the way I would do that is to thicken the metal and rib it and then do a test to see if, under these types of foreseeable accidents it would really retain the integrity of the occupant compartment.

Appendix, 102a.

Thus, it can be seen that Mr. Noettl has no idea whether this strategy would yield a feasible alternative design that would have aided Oddi in the instant accident.

Finally, in Barker v. Deere and Co., 60 F.3d 158 (3rd Cir. 1995), the Court noted that a proposed design change is not necessarily an improvement if such change would increase other relevant risks. There, the Court considered a claim that a tractor had not been crashworthy because the tractor's operator protection system ("OPS") did not sufficiently protect against intrusion by logs, and the Court held that, to prevail under Pennsylvania law, the plaintiff would have to show, not just that an OPS design existed that would have prevented the plaintiff's injuries from log penetration, but also that such a design would "pose no additional risk to the operator." Barker, 60 F.3d at 163-64, *citing* Habecker v. Clark, 36 F.3d 278, 284-86 (3rd Cir. 1994), *cert. denied*, 115 S.Ct. 1313 (1995). The District Court addressed this concern as well in determining that Mr. Noettl's testimony was insufficient to make out a case:

> Other elements of this particular case confirm our conclusions. If the alleged defect involved something like exposed gears or blades on an industrial machine, the proposed alternative could take the form of a cover or guard. In most conceivable cases the composition of the cover – heavy plastic, wire mesh, sheet metal – would matter little, so long as it was sturdy. The machine in this case, however, is heavy, mobile, long-lasting, and carries humans. These machines frequently collide. A lay person's understanding of physics reveals that if car components are made too rigid, the forces of collisions would not be absorbed by the vehicle, but rather will be transmitted to the occupants, or the occupants of another vehicle. Good vehicle design thus must occupy a range between parts that are too soft and too rigid. The summary judgment record gives no indication that Noettl's opinions accounted for such issues to any appreciable extent.

Appendix, 104a-05a.

For these reasons, the District Court was correct, and the Court of Appeals for the Third Circuit correctly affirmed that determination as a proper exercise of discretion.

3. Response To Petitioner's Position

Petitioner advances an overly-simplistic argument built upon numerous fatal flaws. Brought to its essence, Petitioner contends that any vehicle that allows its occupants to be injured in such accidents is *per se* defective because impacts with guardrails at highway speed are

foreseeable. He claims that the "dangerous" instrumentality must have been the truck because it is "uncontested" that the guardrail did not "fail." The obvious flaw in this rationale is the presumption that any device capable of causing injury must be defective. There simply is no support for such a position in Pennsylvania law. To establish a crashworthiness case, Pennsylvania law requires that a plaintiff propose a better way of building the vehicle *and show that that design is feasible and would have made a difference*. Kupetz v. Deere & Co., Inc., 435 Pa.Super. 16, 644 A.2d 1213 (1994), *appeal denied*, 539 Pa. 693, 653 A.2d 1232 (1994). Petitioner has consistently failed to meet these burdens.

There is, however, a more subtle flaw in Petitioner's simplistic approach. Petitioner further claims that, because the guardrail did not collapse on impact, it would have deflected the truck back onto the roadway had the truck only been equipped with a stronger bumper. This entirely untested theory presupposes that the guardrail would have withstood a direct impact from a truck equipped with the battering ram front end as advocated by Mr. Noettl. There is simply no basis in the record to believe that this is true.

III. Conclusion

For the forgoing reasons, Appellees Grumman Allied Industries, Inc., Grumman Olson Bodies, Inc., and Olson Bodies, Inc., respectfully request that the pending Petition For Writ Of Certiorari be denied.

Respectfully submitted,

GORR, MOSER, DELL & LOUGHNEY

JOHN H. WILLIAMS, JR., ESQUIRE
DONALD J. MCCORMICK, ESQUIRE
437 Grant Street
1300 Frick Building
Pittsburgh, PA 15219
(412) 471-1180

Attorneys for Respondents
Grumman Allied Industries, Inc.;
Grumman Olson Bodies, Inc.; and
Olson Bodies, Inc.

(3)

Supreme Court, U.S.
FILED
FEB 12 2001
OFFICE OF THE CLERK

No. 00-1129

In the Supreme Court of the United States

DAVID ODDI; ERIN ODDI, His Wife,
Petitioner,

v.

FORD MOTOR COMPANY, et al.
Respondents.

ON PETITION FOR WRIT OF CERTIORARI
TO THE UNITED STATES COURT OF APPEALS
FOR THE THIRD CIRCUIT

RESPONDENTS' BRIEF IN OPPOSITION

JOHN E. WALL
Counsel of Record
MICHAEL F. NERONE
DICKIE, MCCAMEY &
& CHILCOTE, P.C.
TWO PPG PLACE, SUITE 400
PITTSBURGH, PA 15222-5402
(412) 281-7272

Counsel for Respondents

BECKER GALLAGHER LEGAL PUBLISHING, INC.,
CINCINNATI, OHIO 800-890-5001

28 pp

QUESTION PRESENTED FOR REVIEW

1. Whether the United States Court of Appeals for the Third Circuit Correctly Affirmed The United States District Court for the Western District of Pennsylvania in Granting Summary Judgment to Ford Motor Company and Ruling that Petitioner's Proposed Expert Testimony Was Inadmissible Under *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 113 S.Ct. 2786 (1993)?

PARTIES TO THIS PROCEEDING

Petitioner

David Oddi is a private individual and has no corporate affiliations.

Respondents

Ford Motor Company and Grumman Allied Industries, Inc., Grumman Olson Bodies, Inc., and Olson Bodies, Inc.

CORPORATE DISCLOSURE STATEMENT OF FORD MOTOR COMPANY

Pursuant to Rule 29(6) of the Rules of the Supreme Court of the United States, Ford Motor Company hereby states that it has no parent corporation and no publicly held company owns ten percent or more of Ford Motor Company's stock.

TABLE OF CONTENTS

	Page
QUESTION PRESENTED FOR REVIEW	i
PARTIES TO THIS PROCEEDING	ii
CORPORATE DISCLOSURE STATEMENT	iii
TABLE OF CONTENTS	iv
TABLE OF AUTHORITIES	v
ORDERS AND OPINIONS BELOW	vi
STATEMENT OF JURISDICTION	1
STATEMENT OF THE CASE	1
ARGUMENT	4
I. Requirements for Certiorari	4
II. Petitioner's Product Liability Crash-Worthiness Theories	5
III. The United States Court of Appeals for The Third Circuit Correctly Affirmed The District Court's *Daubert* Ruling	7
CONCLUSION	21

TABLE OF AUTHORITIES

Cases **Page(s)**

Daubert v. Merrell Dow Pharmaceuticals, Inc.,
509 U.S. 579, 113 S.Ct. 2786 (1993) . . . . . *passim*

In re: Paoli Railroad Yard PCB Litigation,
35 F.3d 717 (3d Cir. 1994) 9

Kannankeril v. Terminix International, Inc.,
128 F.3d 802 (3d Cir. 1997) 19, 20

Kumho Tire Co., Ltd. v. Carmichael,
526 U.S. 137, 119 S.Ct. 1167 (1999) 9, 18

United States v. Downing,
753 F.2d 1224 (3d Cir. 1985) 9

Statutes and Other Authorities

28 U.S.C. § 1254(1) 1

Federal Rule of Evidence 702 . . . . . 8, 19

Rule 10 of the Rules of the Supreme Court
of the United States 4

Rule 29(6) of the Rules of the Supreme
Court of the United States iii

ORDERS AND OPINIONS BELOW

Respondent, Ford Motor Company, incorporates herein by reference Petitioner's statement of the opinions below and directs this Honorable Court's attention to the Appendix of the Petition for Writ of Certiorari which contains the following opinions and orders issued below:

October 13, 2000 Court of Appeals Opinion and Judgment at Appendix to Petition for Writ of Certiorari, p. 1a;

September 16, 1999 Supplemental Memorandum on Reconsideration of the United States District Court for the Western District of Pennsylvania at Appendix to Petition for Writ of Certiorari, p. 55a;

September 1, 1999 Memorandum Order of the United States District Court for the Western District of Pennsylvania at Appendix to Petition for Writ of Certiorari, p. 68a;

March 31, 1999 Memorandum Order of the United States District Court for the Western District of Pennsylvania at Appendix to Petition for Writ of Certiorari, p. 85a.

STATEMENT OF JURISDICTION

This Honorable Court has jurisdiction over this matter pursuant to 28 U.S.C. § 1254(1).

STATEMENT OF THE CASE

This action arises out of a June 21, 1993 single vehicle accident which occurred on Northbound Exit 14 of Interstate 79 near Pittsburgh, Pennsylvania, when the Petitioner permitted his vehicle to drift off of the road at approximately 55-60 mph and impact with a guardrail and bridge abutment. (Appendix to Petition for Writ of Certiorari, p. 3a.) At the time of the accident, the Petitioner was operating a bread truck owned and maintained by his employer, Continental Baking Company ("Continental"). This bread truck included a 1976 special order Ford M-5000 stripped chassis which was designed and manufactured by Ford Motor Company ("Ford"). *Id.* The stripped chassis had been ordered by Continental through a Ford dealership and was an incomplete vehicle when it left the possession and control of Ford. *Id.* At that time, it was comprised only of basic component parts such as frame rails, axles, engine, drive train, wheels and a front bumper. *Id.* It did not include any aspect of the vehicle's body, floor, occupant compartment or cargo area. *Id.*

Subsequent to delivery of the stripped chassis to Continental, Continental delivered the stripped chassis to Olson Bodies, Inc., (currently known as Grumman Allied Industries and hereinafter referred to as "Grumman") for the design and manufacture of the finished vehicle including the vehicle's body, occupant compartment and cargo area. *Id.* Pursuant to Continental's specifications, Grumman then designed and manufactured all necessary aspects of the vehicle

to complete it, including the occupant compartment and floorboards. *Id.*

From 1976 through 1993, Continental used the vehicle as a bread delivery truck driving it for literally hundreds of thousands of miles. *Id.* At this juncture, it is impossible to ascertain exactly how many miles the vehicle was actually driven due to missing maintenance records and to the fact that the odometer has turned over an unknown number of times. *Id.*

The Petitioner asserted product liability claims against Ford and Grumman and, in a related action in the Court of Common Pleas of Allegheny County, Pennsylvania, Petitioner asserted negligence claims against the Commonwealth of Pennsylvania, Department of Transportation, regarding the design of the guardrails and bridge abutment in the area of the accident. *Id.*

With regard to Petitioner's claims against Ford, Petitioner asserted that the front bumper of the vehicle was defective because it allegedly bent at some point during impact with the guardrail and thereby allegedly permitted the driver's side front wheel of the vehicle to ramp onto the guardrail. *Id.*

Petitioner's accident reconstruction/design engineer, John Noettl, is a full-time consultant for litigation. Mr. Noettl has never designed a truck or front bumper for a truck. He has never published any papers or articles which relate in any way to any of his opinions in this case. Despite his prior association with various motor vehicle and highway safety organizations, he has never proposed any standard or regulation for bumpers. Nonetheless, he criticized the bumper on the subject vehicle and in a vague and general

manner indicated that the bumper should have been designed differently such that it was supported by braces and/or bracketry and therefore made more rigid. However, he has not reached any conclusions as to specifically how he contends the bumper should have been designed, nor can he say that the use of an alternative design would have changed or altered the accident sequence, as he believes it occurred. (Appendix to Petition for Writ of Certiorari; pp. 23a-29a, 43a-46a.)

More specifically, during the course of two depositions, Mr. Noettl admitted that he did not know a variety of factors central to his version of how the accident occurred and critical to any opinion that the accident would have resulted differently had an alternatively designed bumper been employed. *Id.* In this regard, he did not know: The force exerted by the vehicle on the guardrail; (*Id.*, 23a) the force the guardrail was capable of sustaining; (*Id.*, 24a) the force necessary to bend the front bumper of the vehicle as designed; (*Id.*, 24a) whether a similar vehicle with a front bumper designed with bracketry and braces as he proposes would be capable of sustaining the impact involved in the subject accident without deformation; (*Id.*, 43a-44a) the gauge, tensile strength, thickness, yield strength, width, etc. of the metal to be used in his proposed design so that it could withstand the impact at issue without deformation; (*Id.*, 25a-27a) or how his bracket design could be installed without impeding movement of the vehicle's front wheels and steering system. *Id.* Mr. Noettl did not conduct any computations, analytical analysis or testing regarding his theories in this case. *Id.*, 47a-48a. Rather, he merely rendered bold unsupported speculation.

On July 30, 1998, Ford submitted a Motion for Summary Judgment and Brief in Support to the United States

District Court for the Western District of Pennsylvania asserting that Petitioner's claims should be dismissed because Petitioner's expert failed to satisfy the *Daubert* requirements and that absent such testimony, Petitioner could not establish a *prima facie* claim. *Id.*, 87a.

The United States District Court for the Western District of Pennsylvania ruled on the summary judgment motions, ultimately granting them by Memorandum Opinion dated March 31, 1999 thereafter following the District Court's denial of Petitioner's Motion for Reconsideration (*Id.*, 55a-84a), this case was appealed to the United States Court of Appeals for the Third Circuit which properly and correctly affirmed the District Court's rulings. *Id.*, 1a-54a.

Petitioner is now seeking review of the Third Circuit's affirmance of the District Court's rulings.

ARGUMENT

I. Requirements for Certiorari

Pursuant to Rule 10 of the Rules of the Supreme Court of the United States, a Petition for Writ of Certiorari will be granted only for compelling reasons involving matters of wide spread public importance. Such issues enumerated in Rule 10 of the Rules of the Supreme Court of the United States involve conflicting decisions by the United States Courts of Appeals, conflicting decisions of the state courts of last resort involving important federal questions, issues of first impression involving important questions of federal law that have not been decided by this Court, and cases where the United States Court of Appeals or the state court of last resort has so far departed from the accepted and usual course of judicial proceedings as to call for an exercise of this Court's

supervisory power. The present case presents no such circumstances, but rather involves a routine *Daubert* ruling involving expert testimony which does not conflict with any other decisions, which does not raise any important matters of widespread public significance, and which was decided in complete conformity with the normal course of judicial proceedings. Therefore, it is respectfully submitted that this Honorable Court should deny Petitioner's request for a Writ of Certiorari.

II. Petitioner's Product Liability Crash-Worthiness Theories.

Petitioner's claims against Ford related exclusively to the alleged defective design of the front bumper of the bread truck he was operating at the time of the accident which he claimed to lack the requisite rigidity and thereby purportedly allowed the truck to ride up or "ramp" onto the guardrail and strike the bridge abutment during the accident sequence. (Appendix to Petition for Writ of Certiorari, at p. 4a.)[1] In

---

[1] Petitioner has asserted that the claimed defect was the subject vehicle's "propensity to ramp up onto guardrails" (Petition for Writ of Certiorari, p. 3). However, this was not Petitioner's defect theory. In footnote 14 of its Opinion, the Third Circuit correctly noted:

> This sentence could be read as advancing a new theory of design defect—a "propensity to ramp" theory—because of the height, weight, and design of the truck. That is, it could be taken as a theory separate and apart from Noettl's defective front bumper and floor board theories. However, during his second deposition, Noettl clearly stated

support of his theory, Petitioner sought to introduce expert testimony of John Noettl who rendered opinions that the front bumper of the subject vehicle was defective because it "bent back" when it struck the guardrail. Mr. Noettl further opined that this bending back of the bumper was a defect because "it was designed with a large lever arm on the vehicle, out from the frame rail. It had holes in it for towing, which, in my opinion, would greatly weaken the structure, especially with that large lever arm on it which would allow it to be bent back." (Appendix to Petition for Writ of Certiorari, at p. 23a.) Noettl further claimed that the bumper should have been designed "with either bracketry that would go from the

---

that he was not advancing any such separate theory. He testified:

Q. Alright. "Has a propensity to ramp." When you say that, you are just telling me that this is a bigger truck. And as a bigger truck, you believe that it has more of a propensity to ramp than smaller vehicles?

A. That is correct.

Q. That is all there is to it?

A. That is correct.

Q. And is that a defect?

A. No. That is not in and of itself a defect. The defects are the things we discussed. [i.e., the bumper and floor boards, discussed in a prior deposition.]

Appendix to Petition for Writ of Certiorari, p. 19a.

frame rail out to the center part of that part of the bumper, or what [he referred to] as a backing wedge." *Id.* Thus, Petitioner's claims against Ford invoked crash-worthiness theories that although the design of the front bumper did not cause the accident, it exacerbated his injuries.

Under Pennsylvania law, the term crash-worthiness relates to the protection that a motor vehicle affords its passenger against personal injury or death as a result of a motor vehicle accident. (*Id.*, p. 7a.) The Crash -Worthiness Doctrine imposes liability on the manufacturer not for causing the accident, but rather for failing to minimize the injuries or even increasing the severity of the injuries sustained in an accident brought about by a cause other than the alleged defect. *Id.* The doctrine permits a plaintiff to recover for enhanced injuries, i.e., only for those injuries he can prove he would not have sustained if he had been riding in a crash-worthy vehicle. *Id.* If enhanced injuries cannot be shown, then no liability exists as to the manufacturer. *Id.* To establish a cause of action on a theory of crash-worthiness under Pennsylvania law, a plaintiff must show: (1) the design of the product was defective; (2) an alternative, safer design that was practical existed; (3) what injuries, if any, the plaintiff would have received had the alternative design been used; and (4) the defective design caused or exacerbated specific injuries. *Id.*, at pp. 8-9.

III. The United States Court of Appeals for The Third Circuit Correctly Affirmed The District Court's *Daubert* Ruling.

In *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 113 S.Ct. 2786 (1993), this Court expressly

imposed upon the trial judge a "gate keeping responsibility" to insure that expert testimony is both based on a reliable foundation and is relevant to the issues in the case before such testimony can even be evaluated to ascertain whether Plaintiff has made out a *prima facie* case under the applicable tort law. *Id.*, at 113 S.Ct. 2796. Because expert witnesses, unlike ordinary witnesses, may offer opinions that are not based on first-hand knowledge or observation, this Court recognized the unique potential for expert evidence to be "both powerful and quite misleading." *Id.*, at 113 S.Ct. 2798.

In *Daubert*, this Court unequivocally defined the trial court's gate keeping obligations under Federal Rule of Evidence 702, stating:

> The subject of an expert's testimony must be "scientific . . . knowledge." The adjective "scientific" implies a grounding in the methods and procedures of science. Similarly, the word "knowledge" connotes more than subjective belief or unsupported speculation. The term "applies to any body of known facts or to any body of ideas inferred from such facts or accepted as truths on good grounds."
>
> * * *
>
> Proposed testimony must be supported by appropriate validation - i.e., "good grounds" based on what is known. In short, the requirement that an expert's testimony pertain to "scientific knowledge" establishes a standard of evidentiary reliability.

Id., at 113 S.Ct. 2795. More recently, this Court has explicitly stated that the requirements of *Daubert* apply equally to experts in product liability cases, such as that at issue in this matter. *See Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137, 119 S.Ct. 1167 (1999).

The United States Court of Appeals for the Third Circuit in *In re: Paoli Railroad Yard PCB Litigation*, 35 F.3d 717 (3d Cir. 1994), and more recently in its opinion in this action, interpreted *Daubert* as being in accord with its basic holdings in the *United States v. Downing*, 753 F.2d 1224 (3d Cir. 1985). In this regard, the Third Circuit directed as follows:

> We now make clear that a district court should take into account all of the factors listed by either *Daubert* or *Downing* as well as any others that are relevant. Thus, the factors *Daubert* and *Downing* have already deemed important include: (1) whether a method consists of a testable hypothesis; (2) whether the method has been subjected to peer review; (3) the known or potential rate of error; (4) the existence and maintenance of standards controlling the techniques operation; (5) whether the method is generally accepted; (6) the relationship of the technique to methods which have been established to be reliable; (7) the qualifications of the expert witness testifying based on the methodology; and (8) the non-judicial uses to which the method has been put.

Paoli, at 742, fn. 8.

The proponent of the expert testimony must do more than make a mere *prima facie* showing of the reliability of the expert testimony. *Id.*, at 743-744. To the contrary, the proponent of the expert must demonstrate by a preponderance of the evidence that the experts' opinions are reliable. *Id.*, at 744.

In the present action, Mr. Noettl has reached certain conclusions. However, when specifically questioned for the basis of those conclusions, it is readily apparent that his proposed testimony lacks sufficient reliability to be admissible pursuant to *Daubert* and its progeny.

When deposed and specifically questioned regarding various facts which logically must be ascertained to establish his opinions, Mr. Noettl conceded that he had not performed the necessary computations, analysis, or testing. In this regard, Mr. Noettl testified as follows:

> Q. Now, have you determined what force was inflicted on the guardrail at the time of initial impact with the truck?
>
> A. No, I haven't. No.
>
> Q. Have you determined what force the truck inflicted on the bridge abutment and the rail on top of the bridge abutment when it made contact with that?
>
> A. No, the reason for answering both those questions, you would have a range of variables, also, but guardrails are designed to absorb energy and

deflect vehicles. You would have to make an awful lot of assumptions.

Q. Have you determined or measured the strength or rigidity of the guardrail?

A. No.

Q. You haven't ascertained how much force it could hold; is that correct?

A. That's correct.

(Appendix to Petition for Writ of Certiorari, at pp. 23a-24a.) Mr. Noettl further testified as follows:

Q. Do you know how much force it took to bend that bumper to the point where it's bent?

A. No, I don't.

Q. Do you know how much force that bumper was capable of sustaining without bending? Have you determined that?

A. I haven't determined that, right.

Id., at 24a.

Similarly, when questioned regarding his proposed designs, Mr. Noettl testified as follows:

Q. What type of metal should the wedge be constructed from?

A. It could be the same as the bumper, if you want it to, but you just turn it on end. You could have many, many choices on that.

Q. What if you used a brace? What type of metal should that brace? What type of metal should that brace be constructed from?

A. Again, you could use the same as the bumper. Again you would have a lot of choices on that. The bracketry would probably not be as strong as the wedge. Probably not. Test it and maybe you would achieve a strength that would far exceed anything you could expect.

Q. What would the tensile strength or gauge of the metal have to be on both of those options?

A. The way you go through is look up in books and you say, "Here. We got some metal here and let's try this." Certain gauge, certain strength, something that is readily available. It's not a big thing, is what I'm trying to say. You certainly would not cut holes in it right at one of the most critical points of where your major bending

force is going to occur, which is at your railing.

Q. So this would be something relatively simple to look up in a book, and you could determine from the computations in some engineering book what you should be using. What would the name of the book be?

A. Any machine design book.

Q. Is that a particular book or is that a type of a book, machine designed book?

A. That's a type of book.

Q. Could you give me an authority?

A. There are machine design books that give you all types of metal gauges. If you go through the design process for any of these things on a bumper, frame rails, exactly what they do—they don't sit down. They don't do finite element analysis. They look up in books what metal thickness, what's our yield strength, what's our tensile properties of this metal, bang, bang, bang. We're going to use this.

Q. Have you done that?

A. No. Haven't done that, no.

Q. So you don't know what the thickness would have to be, what the metal gage, what the tensile strength-

A. Right.

Q. -What type of material you would need to use; is that correct?

A. I told you I would use—probably start with the same material that you have in the bumper. Take a piece of metal, turn it on its edge, put it in back of it, weld it on there for a test, see what strength you do gain out of this as far as impact, as far as bending moments and as far as shearing. You sure hope it won't shear off. You would do that. You would say, "I want it a little bit stronger." The easiest way, by far, is to thicken the metal. That's all you have to do. Get a lower gage metal and put that on there and try it again.

Q. How thick would the metal have to have been to have not deformed in this impact?

A. I would say, in my opinion, half inch to an inch and a half range would be more than adequate to withstand the force on edge. That's the thickness, not the width.

Q. What would the width be?

A. I don't know. Three inches or so, four inches.

Id., at pp. 25a-27a.

As the Third Circuit recognized in this case, although *Daubert* does not require a paradigm of scientific inquiry as a condition precedent to admitting expert testimony, it does require more than the haphazard, intuitive inquiry pursued by Mr. Noettl in this case. (Appendix to Petition for Writ of Certiorari, pp. 42a-43a.) The Third Circuit properly recognized that Mr. Noettl's testimony demonstrated that Petitioner could not establish the existence of Noettl's methodology and research, let alone the adequacy of it. *Id.*, 43a.

Although Mr. Noettl claims to have seen designs similar to that which he proposes on other bread trucks, he conceded that he does not know whether those similar trucks, which employ his proposed design, would have been capable of sustaining the impact at issue in this case. In this regard, Mr. Noettl testified:

Q. You don't know whether or not those trucks would have sustained a bending of the bumper the same as this truck because we don't know what the forces are, right?

A. I would say that they have a better chance, but I can't tell you more than that, no. That's correct.

Id., at pp. 43a-44a. Similarly, Mr. Noettl indicated:

Q. But, what you have seen, you don't know whether or not that would have changed the scenario in this accident one way or the other?

A. I haven't evaluated that.

Id., at p. 44a.

Further, as the Third Circuit correctly acknowledged, not only did Noettl fail to perform any analytical analysis, computation, or tests of his theory, he affirmatively failed to consider the design of the guard rail and the possibility that the design of that guardrail was a causative factor. In this regard, he testified:

Q. What if the guardrail was deformed and bent back by the force of the impact so it was bent to the point where it was lower than the bumper? Could a ride up occur then?

A. If it was bent back further than the bumper's height?

Q. If it was bent back and, therefore, it was lower than the height of the bumper, could it ride up?

A. It's possible. I haven't thought of it, and how long. I would have to look at that. If you, your tire is exposed to ramping—

Q. If you have the bumper and the guardrail here and the guardrail bends down to a point lower than the bumper, the tire could ride up on it, isn't that correct?

A. That is a possibility, yes.

Id., at pp. 44a-45a. Finally, the Third Circuit recognized that Noettl conceded that strengthening the bumper and making it more rigid could result in even greater injury because it would transmit more force to the driver of the truck than did the design of the bumper actually employed. In this regard, Noettl testified:

Q. To get back to my question, would the energy—if you had a rigid bumper, on impact, the energy of the impact and force of the impact would be transferred to the occupants, right?

A. Some of it would, yes.

Q. More of it would than if you had a bumper that had give to it?

A. Right.

Id., at pp. 45a-46a.

Contrary to Petitioner's assertions, neither the ruling of the District Court, nor the decision of the Third Circuit imposes an obligation upon him to perform actual crash testing. Quite to the contrary, both of these Courts ruled that Noettl's testimony failed to satisfy *Daubert* because he

performed no analytical analysis, no computations, relied on no authorities, and therefore had absolutely no basis for his opinions aside from his own subjective beliefs. In this regard, the District Court held:

> As Noettl's statements demonstrate, he did no testing of any evidence. He identified no specific treatises, articles, or written authorities on any issue. He performed no calculations. He used no models or computer simulations. Instead to support his opinion, he relied on his experience and training. His curriculum vitae shows considerable experience and training in the area about which he seeks to testify . . . and defendants do not challenge his qualifications. The issue is whether Oddi has sufficient evidence that Noettl brought those qualifications to bear on the particular problems of this case.
>
> We find that he has not. We need not measure his adherence to any of the *Daubert*-related factors identified by the Third Circuit because he satisfies none of them. He has not rendered an opinion like the one found in *Kumho*, where there was at least a particular methodology about tire failure to examine. Reduced to its essence, Noettl's theory is that the bumper and floor should have been made stronger, by using thicker metal or reinforcement. The absence of reviewable study, measurement, calculation, or reference accompanying these conclusions is sufficient to render them unreliable.

(Petitioner's Appendix at pp. 103a-104a.)

Similarly, the Third Circuit explicitly stated:

> Nor does our holding suggest that every plaintiff must engage in such sophisticated and refined testing (including crash-testing) as to preclude a successful suit for damages for all but the wealthiest of plaintiffs or a group of plaintiffs sufficiently large to allow the economies and practicalities of class certification. The inquiry required under *Daubert* ought not to become an impenetrable barrier for plaintiffs with limited resources or restricted circumstances. As noted above, the Supreme Court reminds us that the "inquiry envisioned by Rule 702 is . . . a flexible one" . . .. It does not require the most elaborate or sophisticated tests or studies that can be imagined by opposing counsel. Nevertheless, here, the District Court's inquiry established that Oddi's proffered expert testimony was not admissible under Fed. R. Evid. 702, and we conclude that the District Court did not abuse its discretion in rejecting that evidence.

Id., p. 52a.

Petitioner appears to assert that the Third Circuit's decision in this case is in conflict with its prior decision in *Kannankeril v. Terminix International, Inc.*, 128 F.3d 802 (3d Cir. 1997). However, when *Kannankeril* is carefully reviewed, it is clear that there is no conflict in the Third Circuit's decisions. *Kannankeril* involved expert testimony on a causation issue in which the plaintiff's expert rendered

opinions that the insecticide spray applied by the defendant had caused certain personal injuries to the plaintiff. Plaintiff's expert had employed a differential diagnosis analysis to the causation issue. The Third Circuit recognized that this theory (differential diagnosis) is well established and generally accepted in the medical profession. Although the plaintiff's expert in *Kannankeril* did not personally perform the underlying medical tests upon which his differential diagnosis was based, he relied upon the plaintiff's treating physicians and health care providers' reports and test results in formulating his opinions. The Third Circuit recognized that this is a well established and generally accepted methodology in the medical community. There is no rationale or holding in *Kannankeril* which conflicts with any aspect of the Third Circuit's decision in the present action.

In the present case, unlike *Kannankeril*, Petitioner's expert followed no methodology and performed no analysis or computations. All Mr. Noettl has asserted are his own subjective beliefs without any supporting basis. Thus, the Third Circuit properly affirmed the District Court's exclusion of Mr. Noettl under *Daubert*. This is precisely the type of testimony which *Daubert* and its progeny are aimed at precluding.

CONCLUSION

Based upon the foregoing facts, authorities, and arguments, it is respectfully submitted that this Honorable Court should deny Petitioner's request for Writ of Certiorari.

Respectfully submitted,

DICKIE, McCAMEY & CHILCOTE, P.C.

/s/_____

JOHN E. WALL, ESQ.
Counsel of Record
MICHAEL F. NERONE, ESQ.
DICKIE, McCAMEY & CHILCOTE, P.C.
Two PPG Place, Suite 400
Pittsburgh, PA 15222-5402
(412) 281-7272

Counsel for Respondent
Ford Motor Company